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Comprehensive Zone Ordinance Adopted by Alameda

By Charles E. Hewes
City Manager, Alameda, Cal.

WHAT is probably the most completely worked out and comprehensive ordinance so far adopted in the United States was passed by the Alameda City Council on the recommendation of the City Manager and the Advisory City Planning Commission in February, 1919.

Alameda is a city of approximately 35,000 population, with about four miles of industrial water-front along the north side of the city, and recreation beaches on the south side, the main portion of the city being a large island, with a second undeveloped area of several square miles of farm land on Bay Farm Island, to the southeast.

After a year's careful study of the tendencies of growth in all parts of the city and the preparation of "Use of Property" and "Heights of Buildings" maps, the city's consultant in city planning, Charles H. Cheney, held neighborhood meetings and conferences in each of the principal districts and centers of the city, some forty conferences in all being held, at which an agreement was obtained as to what protections would be for the best interest of property owners in each neighborhood. These neighborhood recommendations were then combined in a general zoning plan, and the whole was put up for public hearing as the preliminary form for the zoning regulations. So well had the preliminary work of education been done, however, that there were practically no objections to the ordinance, either at this time or at the later hearings after it was introduced before the City Council.

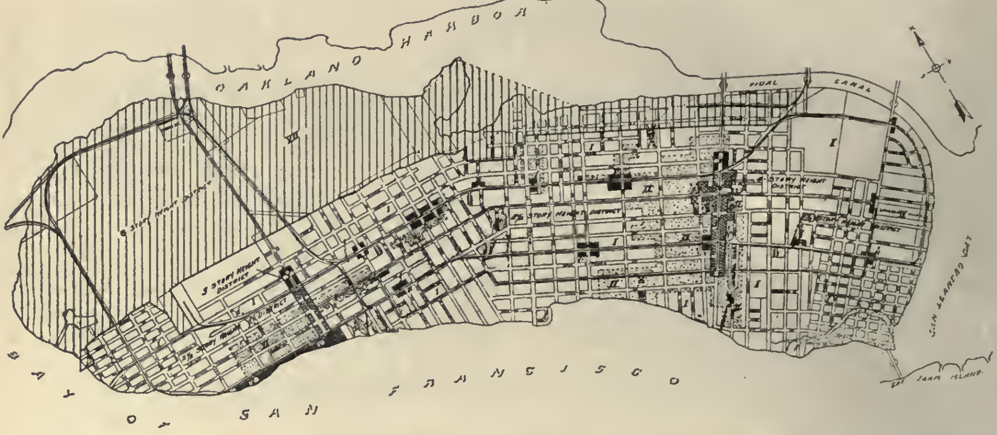
This ordinance is expected to stabilize property values, prevent the deterioration of residence districts, and help business by requiring it to be concentrated at established centers and by making a definite place for industries to locate and invest where they will be safe from protest and interference. It combines the best features, we believe, of the Los Angeles, St. Louis and New York ordinances, and is similar to the zone ordinance adopted in Palo Alto (population 6,000) in August, 1918, and to the proposed new Berkeley and Fresno ordinances. The ordinance applies to new building permits only, existing buildings and uses of property not being affected even tho they fall outside the respective zones proper for them.

Eight Classes of Use Districts Found Necessary

Eight classes of use districts were found to be the minimum that would cover our requirements. Altho it is desirable to have as few classifications as possible, we found that we could not cover Alameda's needs with less. The use districts established are as follows:

Class I Residence Districts permit single-family dwellings only. The Class I Districts were established to cover about two-thirds of the residence area of the city.

Class II Residence Districts permit any kind of dwellings: flats, dormitories, apartments, hotels without stores. About a third of the city, in which flats and apartments were already established, was placed in this classification.



ZONE MAP OF ALAMEDA, CAL., SHOWING DISTRICTS I-VIII LIMITING USES OF BUILDINGS AND PROPERTY, AS DESCRIBED IN TEXT

Class III Business and Public Use Districts are for ordinary better class retail business, trades and professions, including residences of Classes I and II. Two principal business centers of the city, on Webster Street and on Park Street, each some six blocks long, were put into this class, with smaller business districts of Class V adjoining them.

Class IV Business and Public Use Districts are for schools, public and semi-public buildings, churches, playgrounds, greenhouses and nurseries and parks, including single-family dwellings. All such institutions thruout the city have been placed in small districts of this class, comprising only the size of the lot which they occupy.

Class V Business and Public Use Districts are for all types of business of Class III plus public garages, dyeing and cleaning establishments, wholesale business, warehouses, oil-supply stations and any kind of residence or public use of Classes I, II, III or IV. They comprise small areas adjoining the Class III centers and also many little local business centers at cross-roads in residence sections.

Class VI Business and Public Use Districts are for hospitals, sanitariums, charitable institutions and any kind of residence of Classes I and II. As yet no districts of this class have been assigned; any new institutions of this type will have to have a public hearing and secure approval of the neighborhood and amendment of the zoning place before locating.

Class VII Industrial Districts are for all ordinary, non-obnoxious factories, warehouses and industries, including any business use, but excluding new residences of any kind. A district one-half mile wide and about three miles long along the north water-front was established in Class VII, where the present industries of the city are located. Another industrial district was also provided on Bay Farm Island, for future development. The first district is identical with the previous industrial zone established by ordinance a year ago, which also prohibited new dwellings from going in and blocking the growth of industry.

Class VIII Industrial Districts are for obnoxious and odor-producing factories, including any business use, but excluding new residences of any kind. One district of this kind only has been established now, on the leeward side of the city, where the prevailing winds will blow smoke and odors away from the city across the bay marshes extending to the eastward.

Building Height Limits Established

The ordinance also provides for protecting the various parts of the city from the dangers of overcrowding and from depreciation of property values by the building of scattered over-high structures. The following Heights Districts were therefore established, carefully arranged to protect the existing tendencies of growth:

2½-Story Height Districts require all new buildings to be limited to a maximum of two stories and finished attic, not to exceed a total height of 35 feet to the finished line of the attic floor, above the curb. As over 99 per cent of all the buildings in the city were found to be of this type or less in height, the city felt justified in maintaining this tendency. This height limit was placed upon the residence districts of Class I.

3-*Story Height Districts*, limited to a maximum of three stories not to exceed 40 feet to the finished ceiling line of the third floor, were established to cover the Webster Street business district and residence districts of Class II, for hotels, flats and dwellings.

4-*Story Height Districts* are limited to four stories, not to exceed 50 feet to the finished ceiling line of the fourth floor. One district of this kind only was established for the present, to cover the principal business center of Classes III and V on Park Street.

8-*Story Height Districts,* limited to eight stories, not to exceed 90 feet to the finished ceiling of the eighth story, were established to cover the industrial districts of Classes VII and VIII. This is perhaps a higher limit than necessary. The City's Consultant advised four stories, which had been the limit in our previous Industrial Zone Ordinance of 1918. Some of the Planning Commission could not understand the need for any limits, and the compromise height of eight stories resulted.

Towers, tanks, chimneys, spires, etc., covering an area of not more than 15 per cent of the lot are allowed to be built up to any height.

Area Requirements to Insure Light and Air

In Industrial Districts of Classes VII and VIII, where windows are needed for light and air, a rear yard of not less than 5 feet must be provided.

In Business and Public Use Districts of Classes III, IV, V and VI, all yards and courts, where required for light and air, must not be less in dimensions than required for tenement houses in the California State Tenement House Act.

In Residence Use Districts of Classes I and II, yards and courts, of whatever use the building is put to, must be the same as for a dwelling in the California State Dwelling-House Act.

A special class of "Home Area Districts" includes all Class I single-family dwelling districts and provides that no lot may hereafter be covered more than 50 per cent. It was found that practically all of the dwellings in these districts now cover only from 20 to 25 per cent of the lot and that therefore this restriction would not be stringent.

Altho it is less difficult in a small city, I am glad to say that there are no "unrestricted districts" or unfinished portions of the zoning work in this ordinance, such as have been left in some of the larger cities. Alameda therefore has complete control of the situation. However, new locations for industries, particularly adjoining railroad lines, and other changes of districts can be brought about in a very short time by amending the ordinance and holding public hearings. No such changes, however, can hereafter be made without the neighborhood's being consulted, and none of the city is left in uncertainty. We expect the ordinance to be amended from time to time to keep pace with the needs of the city as it grows.

With the zoning of the city settled upon, Alameda now has a definite and exact basis on which to lay out a major traffic street plan. The minor residential streets are determined by the zones established, and can be paved with less costly and narrower pavements, with more parking accordingly. The fire limits of the city can be rearranged to cover only business districts so as not to work a hardship on other areas. A sound basis for mortgage loans has been established, thus stabilizing land values, and making a surer and easier foundation for city assessments and taxation.

Town Planning Institute for Canada

A number of professional men in Canada —town planners, architects, surveyors and engineers—have formed themselves into a Town Planning Institute with the object of advancing the study of town planning and the proper development of urban and rural land.

One of the immediate objects of the Institute is to promote educational courses on town planning and rural development in the universities.

The new Institute is starting out on original lines for a professional body. It has no chartered members who enjoy election without proving their quality. Every member must as a first condition be a member of an existing architectural, engineering or surveying professional institution. In addition, he must also undertake special study on town planning for a year and submit a thesis or pass an examination on the subject at the end of that period of probation.

Legal members of recognized standing will be admitted as a special class, since town planning schemes cannot be carried out without legal advice. There will be associate members from other professions, such as journalists and medical men who are interested in those aspects of town planning that are not strictly technical.

It is hoped to organize meetings and appoint lecturers in the near future to carry on the elementary educative work thru the country. A group of about one hundred architects, engineers and surveyors have been nominated for membership.

Regional and Town Planning

By Thomas Adams

Housing and Town Planning Adviser to the Canadian Government

TO plan our cities and towns properly, we must investigate and analyze many problems which have a bearing on life and growth within and surrounding them. Recent events thruout the world have shown the extent to which the town and the country are interdependent. Recent tendencies in industrial decentralization have also shown the importance of one of the modern aspects of town planning, namely, the direction and control of the growth taking place within the rural and semi-rural districts where new industries are being established. The artificial boundaries of cities are becoming more and more meaningless. The real controlling factors which determine and encourage industrial growth are physical and natural to a greater extent than they are administrative and artificial.

One of the difficulties in dealing with this subject is that we have not yet adopted a clear and unambiguous terminology. We must therefore define our terms.

1. The *Regional Survey* has to do with the investigation and mapping of the existing physical, industrial and residential features of a region that has interests and problems in common, which needs comprehensive and co-ordinated treatment without regard to arbitrary administrative boundaries.

2. The *Regional Plan* is concerned with the general planning of the area included in a regional survey. It is a skeleton and tentative plan of a region within which there is comprised a series of municipal units, in juxtaposition to one another, and having overlapping and interrelated problems. The width, direction and classification of our main and secondary highways should be governed by the needs of such a region and not by the needs of one municipality within it. This principle is fully recognized in Ontario highway legislation, in regard to the principle on which the cost of construction is apportioned. The planning of our systems of communication in the regional plan should also have regard to the classification of land for different purposes of industry or residence. Land should be classified in a general way for industries, for residences, and perhaps for agriculture, for park areas or for special reserves, or as unsuitable for building purposes.

We would also consider within the region how far it is desirable to prescribe a code of housing and town planning regulations to deal with building conditions that need to be dealt with in common over large areas of different character. Sewerage and water-supply may have to be dealt with in large regions to obtain efficient and economical schemes in cases where it is not practical to get an efficient system of either in separate units of administration. These and other problems that can be dealt with in a preliminary and general way need regional, rather than municipal treatment.

3. The *Town Plan* is the definite plan, accompanying a definite piece of legislation, for fixing within the city or the country areas, first, those parts of a regional plan which are locally approved, and, secondly, the civic design and regulations dealing more intimately and precisely with the problems connected with the growth of the town, its means of communication, its industrial development, its residential areas, its character and density of building, etc.

We thus have three distinct processes each connected with one another, and logically leading up to one another, which are the Regional Survey, the Regional Plan and the Civic Plan. It is unnecessary for me to argue with town planners how hopeless the task is to attempt to prepare a plan without having obtained accurate data regarding existing physical and industrial conditions.

We hear much of reconstruction. One of our greatest needs is to know what and how to reconstruct. In parts of Europe the work of reconstruction is simple and clear. It is a matter of rebuilding what has been destroyed by war. Here, reconstruction has to deal with involved human and economic problems, with transition from disorder to order, with remedies for traffic confusion and with bad housing and wastefulness of resources. As an English writer recently said: "The monument which this war demands is the reconstruction of the material fabric of civilized life, its reconstruction upon a survey and a plan," and, as Carlyle said long ago, the most effectual of all work is wise planning.

Need of Regional Planning

The nature of modern growth of communities, of the relation which exists between different elements in our community life, and the changes which are ever taking place in methods and conditions, impose upon us the obligation to deal with the regulation of growth on elastic principles over wide areas, and at greater expense of time and money than we have hitherto given to it. We must not only prepare our schemes by gradual steps, but prepare them in such a way that gradual fulfilment will be obtained. While our ultimate objective must be clear in our minds, we must be content to work towards it by successive steps instead of jumping to the concluding stages without adequate measures of preparation.

During the time that I have been in Canada preparing town planning schemes, the greatest want that I have experienced has been the absence of topographical maps of sufficient scale and accuracy to provide a good foundation for the preparation of such schemes. The ordnance maps available in England are of immense value, out of all proportion to their cost. It is probable that a good topographical map on a sufficient scale could be prepared for the Niagara region at a cost of $1.50 an acre, or at approximately $1,100,000 for the whole area. Of this sum, $625,000 would have to be spent in the states and $475,000 in Canada.

We have larger scale maps for most of our cities, but they are mostly inaccurate and inadequate. In the majority of cases they consist of a series of subdivision plans fitted together and have little regard to existing physical features. So far as they show subdivided areas which are not graded and improved, much less built upon, they are useless and misleading for most purposes.

Purposes and Principles in Regional and Town Planning

For what purposes do we require more accurate information and what are the usual problems that have to be dealt with in planning a large region? We may summarize these purposes and problems as follows:

1. Industrial development, including the arrangement and classification of all lands and the location and distribution of manufacturing plants
2. Economic use and regulation of the subdivision of land and the character and density of structures in rural and urban areas
3. Housing—sanitation, convenience and amenity
4. Transportation—railways, highways and waterways
5. Sources and distribution of power
6. Water-supplies and sewerage
7. General amenities, including parks and boulevards and development of tourist facilities

In regard to these problems a few general principles may here be restated.

The magnitude of the problems when dealt with together is not a reason for continuing to deal with them in piecemeal fashion, as the price of failing to apply scientific methods is so great that any reasonable effort or expense to avoid its payment will be justified.

No city planning scheme can be satisfactory which is not prepared with due regard to the regional development surrounding the city, and no purely local plan of means of communication by rail or road can be adequate or efficient. The skeleton plan of the region should come first, followed by a series of city and town planning schemes, and both must be preceded by the regional survey.

There must be coöperation between the municipalities in the work of preparing the regional survey and the plan, and coöperation between the municipal councils, the heads of industries and the owners of real estate in working out the city or town plan.

The regional plan must be tentative and elastic, while the city and town plan must include only the things that can and should be enforced by law, making allowance for elasticity and modification in accordance with conditions specified in the schemes.

In the regional plan we have to consider, inter alia, the regional aspects of districting or classification of zones; the application of minimum standards of a housing code below which standards no local authority should be permitted to go; the planning of main arterial highways, either between populated centers or radiating from them into rural areas, or forming circumferential roads connecting the principal radii; the relation between industries and all means of communication; the conservation and distribution of power; and the preservation of general amenities.

In the city or town plan we have more intimate local problems and have to deal with questions relating to character, height and use of buildings in areas of different kinds and situations, and in relation to varied widths of street; planning of areas intervening between main highways or likely to undergo reconstruction; definite zoning of manufacturing, residential and park purposes, and fixing of varied widths of street to suit these purposes; local regulations as to apportionment of cost for different classes of streets, etc.

Examples of partial regional planning are to be found in the United States—in the metropolitan region of Boston, in the proposals to deal with Greater Pittsburgh, and in the proposed county planning legislation of Wisconsin.

Regional Planning in Canada

Regional planning schemes are being promoted in a number of centers in Canada. Our town planning legislation is really regional planning legislation. The Halifax group of schemes being prepared by the city and county authorities, in coöperation with one another, deals with the whole of the region tributary to that city that is likely to be affected by urban growth. It is hoped to bring the whole of Nova Scotia under town planning regulations in the next three years under mandatory legislation. The St. John scheme covers 20,000 acres, of which more is in the country than the city. It is a regional scheme and lays down definite rules and not merely tentative proposals to govern future development. It has been formally approved by the municipalities. The schemes for Calgary and other Alberta cities will be in effect regional schemes, as they will prescribe the conditions of development of the agricultural belts round the urban areas.

The coöperative action of the local authorities in these cases is being obtained only because of the assistance and guidance given by the Housing and Town Planning Branch of the Federal Government, acting thru and in complete harmony with the provinces.

What we are aiming at in all our housing and town planning administration in Canada is to give reality to federal, provincial and municipal coöperation, and as we perfect that, I can see the home-rule bogey vanishing into nothingness. That bogey has never existed because of the guiding hand of the state, or the intelligent and skilled directions of state bureaus; it is the creation of the pettytogging interference of provincial and state politicians whose restricted measures are designed to cover their ignorance and not to promote principles of general well-being. Home rule in its extreme form is the bolshevist reaction to state autocracy; and the antidote to both is to be found in the sane middle course of mandatory coöperation between all groups of government backed up by skilled executive departments in the provinces and states and trained managers in the municipalities.

By coöperative action we can get all the regional planning that is needed. It will not endanger but will rather strengthen the case for effective and reasonable home rule.

Proper measures of regional planning will enable us to regulate and organize the development of new industrial communities, thereby helping to break down the necessity for one-industry towns. We cannot stop the dispersal of industries into rural areas, but we can assist in planning and directing it in the right way. One of the mistakes which seems to be prevalent in modern life is to use the mistakes made in past measures of social improvement as an excuse for committing the still greater error of doing nothing to effect improvements. In the degree in which we resist that fatal philosophy we shall show ourselves worthy of the trust given to us by our heroic dead.

Acknowledgment.—From a paper read at the Annual Conference on City Planning, held in Niagara Falls, N. Y., May 27, 1919.

The Common Sense of Civic Centers

By Nelson P. Lewis

Chief Engineer, Board of Fstimate and Apportionment, New York City

Ambition to create civic centers has become quite general and is laudable. Many projects of this kind have been proposed, some prompted by a desire for the spectacular; others by the hope of realizing some ill-defined ideal; some, perhaps, by the prospect of personal gain; and still others thru an appreciation of the value of order and economy in public business.

In a study of the civic-center problem the following fundamental principles should control: (1) The centralization of all city business in one locality, while it may result in economy and convenience in the case of a small city, may prove costly and inconvenient in a large city; (2) civic centers should be planned so that only related public business and activities need be concentrated in them, subordinate or secondary centers being established when over-centralization becomes apparent; (3) secondary centers should be so located as to be easily accessible thru direct traffic routes from the principal center and from one another, and readily found by those desiring to reach them; (4) the possible need of principal and secondary centers should be kept in mind when developing the plan of any city and its successive additions, so that a rearrangement of the streets about or leading from them may not be necessary; (5) it should be assumed that the buildings comprising the civic group or groups will be worth seeing, and the chief buildings should, therefore, be on the axis of one or more of the streets leading to them; (6) some competent and continuing authority should be required to approve plans for all civic centers and designs for all public buildings or other structures located in or about them, and such plans, once approved, should not be changed without the concurrence and approval of the same authority.

Acknowledgment:—From a paper read at the recent Annual Conference on City Planning.

Census Bureau Asked to Use in 1920 Same Districts That Were Used in Gathering Data for 1910 Census

The following resolution was adopted by the Annual Conference on City Planning, held in Niagara Falls and Buffalo, May 26-28, 1919:

"*Whereas,* in the gathering of the fundamental data on the growth of population of cities, it is essential that the same enumeration of districts be used in the taking of the 1920 census if we are to have an accurate comparison of growth, be it resolved, that the Director of the Census Bureau is hereby requested to have such enumeration of cities of 10,000 and over made with the districts or the exact multiples of districts as in 1910."

New York State Mayors Consider Pressing Problems

Extracts from Discussions at the Tenth Annual Conference, Held in Schenectady, June 10-12, 1919

Street Railway Service at Cost

By Harlow G. Clark
Editor, *Aera*

THE fundamentals of the so-called Service at Cost Plan are as follows:

First, that private individuals and corporations shall act as agents of the public in providing street railway service.

Second, that such agents shall receive for their services (a) such a rate of interest upon their investment in the property used and useful in serving the public as will attract capital into the business, and (b) an additional compensation as a reward for initiative, to be measured by the economy and efficiency manifested in the management.

Third, that the degree to which the street railway system shall be called upon to bear public taxes and imposts be determined in the light of fairness and justice as between the taxpayer and the car rider against whom such imposts are directly levied.

Fourth, that the cost of operating the property should be borne by the persons receiving the service, by a system of fares so adjusted as to respond to the variations in costs.

Fifth, that the public, under such a system of fares as will provide the cost of whatever service is required, prescribe the service to be furnished.

Sixth, that because under the plan proposed the rate of fare will largely depend upon the economy and efficiency with which the property is operated, the coöperation of the public in the elimination of unnecessary service and in the introduction of all proper operation economies be enlisted.

The soundness of these proposals is unaffected by any considerations of state or local control, or of varying systems of fares and fare collection. They can be applied thru public service commissions as well as thru municipal departments or municipal directors, and they function as well if fares be measured by the distance the passengers are transported as if flat rates are in effect.

Service at cost is not a new thing to the United States. It has been in effect in Cleveland since 1910, and the Boston Elevated Railway Company operating in the city of Boston, the Bay State Street Railway Company serving the eastern part of Massachusetts, the Mahoning and Shenango Railway Company serving the city of Youngstown, Ohio, the Montreal Tramways Company serving the city of Montreal, Canada, and the Cincinnati Traction Company serving the city of Cincinnati, are now operated under complete service at cost plans. The agreements effective in Chicago, in so far as the surface lines are concerned, in Dallas, Tex., Des Moines, Ia., and Kansas City, Mo., also embody many service-at-cost features.

The merits of the Service at Cost Plan are these:

1. That it establishes a method by which the price of street railway service may be brought into correct relation with its cost;
2. That it is applicable to all methods of operation and control whether directly by public or private corporations or by state or local regulation;
3. That it permits the public to specify the kind and extent of service to be furnished;
4. That it is applicable to any system of charging, either by distance, by zones, or by a flat rate;
5. That it induces coöperation between the public and the management in securing economical and efficient management;
6. That it removes the antagonism between the public and the corporations furnishing them transportation service, and
7. That it establishes the transportation utilities as agents of the public, performing for the public a public service and receiving therefor a reasonable, a sufficient and an assured return.

EDITORIAL NOTE.—The crux of the Service at Cost Plan is the question of the valuation of the property. This in turn involves such factors as depreciation, cost of reproduction, etc., which were discussed by Delos F. Wilcox at the same session at which Mr. Clark's paper was delivered. THE AMERICAN CITY expects to publish extracts from Dr. Wilcox's paper in the August issue.

Salaries Paid in Other Cities Not the Only Criterion

Report of the Committee on the Standardization of Salaries

THE salaries paid for municipal service in American cities seem to have been fixed from time to time in accordance with expediency and as the result of the judgment and experience of city officials. Municipal personal service does not seem to lend itself readily to such scientific forms of analysis as we have found useful when considering the basis of commodity charges. It is not strange, therefore, that many officials have come to believe that rational methods cannot be used to test the reasonableness of such salaries.

One of the difficulties at the outset is to find a test of equitableness which will be fairly applicable to all cases.

If it were possible to say that a high standard of educational service is of first importance in municipal government, or perhaps that police protection occupies this high level, or again that fire service could properly be called the greatest service, also that those enjoying these particular privileges should contribute to the cost of government in direct proportion to the benefit derived therefrom, then it would be logical to make the test by applying methods known in industrial enterprise, and thus obtain a workable standard for such departmental service.

But anyone who has given any thought to the subject knows that no such relative ranking of departmental activities can be fairly made; also our whole scheme of tax assessment, as at present arranged, does not admit of any such direct proportionate assessments. Therefore, any such plan must be dropped as impracticable. It is discussed here only for the purpose of drawing attention to the extreme difficulty, if not impossibility, of successfully applying ordinary methods to the solution of our problem.

For practical purposes, however, we feel that some approach can be made toward the ideal by treating the subject on the broad plan of paying something more than a living wage, as a matter of justice to that great body of workers who are giving their time and energies to the general public service.

When a change in the salary schedule of school teachers, policemen and firemen is proposed, the principal basis now advanced and considered in many instances is the schedule that is being paid by other cities of the same size or class. We believe that this is wrong. It is based on the false assumption that the correct standard for all cities of a class is the highest or lowest salaries paid by any one city. A schedule of salaries for each of the three departments and applicable alike to all cities of the second or third class is impossible because there are many controlling local conditions which differ in every municipality. In our opinion there are a number of factors which should be considered in the determination of a salary schedule. These factors are as follows:

Factors Applicable to All Teachers, Policemen and Firemen
- Living wage, based on family budget of officials and employes involved
- Cost of living in the community
- Character of service required
- Amount of service required
- Character and size of population
- Supply and demand
- Pension benefits
- General scale of industrial wages in community
- Relation of tax rate to percentage of true value at which real property is assessed as indicative of the city's ability to pay

Additional Factors Applicable to Teachers
- Initial qualifications

Additional Factors Applicable to Policemen
- Prevalence of crime
- Service grading
- Preventive work, including social service
- Personal equipment furnished and required

Additional Factors Applicable to Firemen
- Preventive work
- Service grading
- Personal equipment furnished and required
- Fire risks
- Character of department equipment
- Organization of department (part or all paid)

Your committee feels that an inquiry into an application for rerating salaries which considers these several factors and compares them with similar factors in other cities of a similar size in the same class will be likely to lead to results that will be fair both to the individual employe and the community such individual serves.

Respectfully submitted,

W. W. Nicholson,
Commissioner of Public Safety, Syracuse.
Harry Evans,
Comptroller, Binghamton.
Arvie Eldred,
Superintendent of Schools, Troy, N. Y.

Home Rule or State Control?

By William J. Wallin
Mayor, Yonkers, N. Y.

It is obvious that the state has the legal power to limit city expenditures, but if a limitation is set, then the state must control the expenditures. Existing constitutional and legislative limitations are evaded by various methods, for if the people demand a service in excess of the limits fixed, city officials will find a way to get it. No legislature can foresee every emergency that may confront cities, and there must be elasticity even to fixed expenditures, but this cannot depend upon the city governments, for that would destroy the limitation.

Why did the Mayors remark that were the Legislature to adjourn for ten years, the cities would hold down expenditures? Not because of any disrespect, but because they must go before their people with budgets the greater portion of which are dictated by the state. The Legislature not only prescribes the minimum amount of health and education, etc., but supervises the details, the furnishings and the salaries to be paid. The cities are willing to pay some premium for home rule, for they can then be certain that they are getting the service they require from officials responsible to them at intervals. Every mayor believes in the pay-as-you-go policy, but each one will evade that responsibility if the Legislature at the behest of active minorities imposes burdens which the people do not want and will not bear.

If home rule is granted, it will not be long before the people learn that the place to cure their local ills is in the city and not at the State Capitol. There is no stopping point between state control and as full home rule as is consistent with the sovereign rights of the state.

Cleveland Underdrains All New Pavements

Methods and Advantages of Artificially Draining the Subsoil

By Fred R. Williams

Paving Engineer

NO pavement has been built in Cleveland for more than three years without having an artificially drained subgrade. A standard type of subdrain was adopted in 1916 and was specified thereafter for all new construction. The only variation from the standard selected has been that required for the unusual cases where investigation clearly showed the need of greater carrying capacity than the standard provided.

From the experience of three years, the city is prepared to say that the results have fully justified the extra expense of construction. Belief in thoroly draining the subsoil is firmer now than when the decision was made to underdrain all streets.

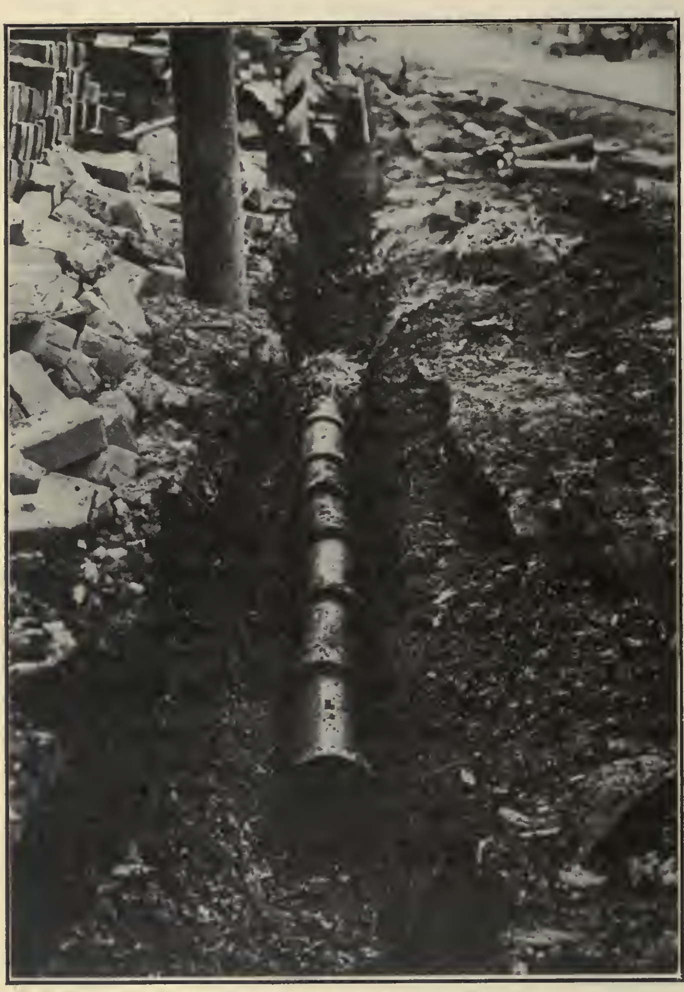
The benefits have been direct and indirect. In a direct way the damage to pavements from wet or frozen foundations has been reduced materially. Longitudinal cracking, while not entirely eliminated, has decreased by a noticeable amount. Indirectly, the city has benefited by the ability of contractors to build streets more speedily and to avoid the loss of time in construction that follows heavy rainstorms during the working season.

The city has been a gainer in the same way as was one contractor who elected, prior to 1916, to underdrain a pavement at his own expense, so that the subgrade would dry faster after heavy falls of rain, and thus save time to his organization.

The Standard Subdrain

The standard form of subdrain is a line of 4-inch vitrified pipe laid behind and 6 inches below the bottoms of the curbs on both sides of the street. The invert of the

WOODHILL ROAD, CLEVELAND, OHIO, SHOWING 4-INCH VITRIFIED CROSS DRAINAGE PIPE AT INTERSECTION OF STREET



A 6-INCH VITRIFIED PIPE DRAIN LAID UNDER CURB ON EAST NINETY-THIRD STREET, CLEVELAND, OHIO

pipe is 3 feet below the elevation of the surface of the pavement at the center line. Excavation for the curbs and drains is 13 inches wide and 30 inches deep in the portion of the trench occupied by the pipe.

The bottom of the trench is stepped up 4 inches on the inside and under the portion of the trench occupied by the curb, so that the back-fill begins on a level with the top of the pipe and is 6 inches deep under the curb. The full depth of the back-fill over the pipe is 26 inches, of which at least 12 inches is required to be of screened gravel, broken stone or coarse cinders well tamped. A modification of this design—backing or reinforcement with concrete—is used on curves.

The vertical pipes are required to be sound and uniformly well burned. They are of the bell-and-spigot type. The spigot is thrust well into the bell, but the joint is left open for the admission of ground water. It is, however, protected against the entrance of dirt by burlap wrappings about each joint. These coverings are in strips 8 inches wide and long enough to overlap at least 8 inches, with the overlap on the top of the pipe.

Discharging and Removing the Water

The primary function of pipe underdrains is rapidly to remove subsoil water and to permit the inflow of air to dry out the soil. Consequently there is every advantage in discharging the pipes at frequent intervals, and a corresponding disadvantage in attempting to carry the water for long distances.

According to Cleveland designs, the water is never flowing more than 250 feet, and frequently but 200 feet. The limits of the flow are determined by the spacing of catch-basins. Each longitudinal line of pipe begins in a dead-end a few feet removed from a catch-basin and continues nearly to the next one.

The catch-basins accumulate the surface water and discharge it thru 12-inch connections into sewer manholes located along the center line of the street. However, the longitudinal underdrains do not discharge directly into the catch-basins; instead, they are turned in toward the center of the pavement a few feet away from the catch-basin itself, so that they discharge into the 12-inch catch-basin connection.

Both the joints of the 12-inch connecting pipe as well as those of the longitudinal drain are filled with cement mortar under the pavement proper. Leakage is thus prevented.

Variations From Standard Underdrains

"Standard" is used to describe the two lines of pipe along the curbs, largely because they are adequate for most Cleveland streets. The standard design is not used blindly; careful study is given each street to estimate the drainage requirements before the plans are decided upon.

In cases where greater carrying capacity is needed or where it is believed necessary to increase the area subdrained, recourse is had to diagonal laterals branching off the curb lines. These laterals are laid on one or both sides of the street, according to requirements. For the most part, they are laid every 50 feet apart, and they make an angle of 45 degrees with the curb.

Where laterals are used, the diameter of the pipe is 4 inches and the longitudinal lines are increased to 6 inches. No change is made from the bell-and-spigot type nor in the manner of laying the pipe.

When Increased Capacity is Needed

It is only occasionally that laterals are required for Cleveland pavements. Probably the most frequent case is for side-hill locations where there is visual evidence of springs or of ground water seeping thru the face of the slope on the up-hill side. Two longitudinal lines augmented by laterals discharging into the line on the up-hill side will usually take care of this situation. Unfortunately there are no specific criteria to fix exactly the amount and character of drainage to install. For all practical purposes, however, it is better to err on the side of an excess capacity rather than not enough. A little underdrainage is better than none, but not so good as too much. And the extra cost of excess capacity is earned back in the form of insurance against underestimating the destructive possibilities of freezing foundations.

A Notable Instance of Subdrainage

Woodhill Road in Cleveland is probably the most interesting example that has been presented of Cleveland's method of attacking the drainage problem. In the first place, we could not afford to take any chances of the failure of this street. It is the main cross-town artery in the east end, and it bears a traffic rarely equaled for weight, variety and frequency. The economic importance of the street in the affairs of the city led to the choice of 5-inch vitrified brick for durability, one half laid on green concrete and the other on a concrete base and cement-sand bed, the total depth in both types being 12 inches.

Still further insurance of durability was placed in a thoro system of underdrains. The location is on a side hill, and the design of the drains called for 6-inch pipe along the upper curb and 4-inch pipe on the lower side; 4-inch diagonal laterals discharge into the longitudinals on the up-hill side.

A recent examination of the street disclosed not a single crack or other fault. By itself this statement, altho strong, might not carry the weight it really has, but when the further statement is made that the pavement that preceded it was marked by considerable cracking, beginning in its first year, it is not to be wondered at that Cleveland is inclined to place great faith in thoro underdrainage.

All the favorable results of our underdrainage program will not of course be apparent in three years. But in ten, fifteen or twenty years the greater benefits will be apparent and, we believe, will justify our course of action in the eyes of those who may not see the ills of lack of drainage as clearly as we think we do.

COMMUNITY MARKET ON PUBLIC SCHOOL GROUNDS, GARDNER, MASS.

The Community Market—Its Benefits and Influence

By E. B. Reid

Chief of Division of Information, U. S. Department of Agriculture

THE housewife with her market basket is now carrying home considerable perishable food, such as fruit, vegetables, dairy and poultry products, bought direct from farmers. This is particularly true in New England, where many towns and cities have established what are known as community markets.

In every community there are usually a number of farmers or small gardeners who produce, above their own needs, a small surplus of food products, an amount often too small in the individual case to command much, if any, consideration from the wholesale buyers. These various small surpluses represent, in the aggregate, a very considerable addition to the community's food supply, and, if such supplies can be economically placed in the homes, they are well worth utilizing, especially in this day of high living costs and need of conservation of both supplies and transportation.

In the past, to distribute these supplies of vegetables, dairy and poultry products various methods have been employed, nearly every town and city having become familiar with the huckster's wagon or the farmer's wagon peddling from house to house. Such methods of distribution have many undesirable features, among which are irregularity of supply, limited assortment from which the housewife may select, lack of opportunity for comparison of prices, expense of the vendor's time while acting as salesman, and the cost of transporting his wares from house to house.

Utilizing Local Food Products

In an effort to do away with some of the objectionable features of the peddling system of marketing, but principally in an effort to utilize all locally grown food products, thereby tending to relieve to some extent the demand otherwise made on transportation lines, various municipalities have designated portions of streets, public squares or vacant pieces of property on which the farmers or gardeners of the community may offer their products for sale, only a nominal charge being made for a selling stall or stand. Such markets have come to be known in numerous places as "community markets"—markets at which the consumer deals directly with the producer of the supplies offered for sale; while in other cities they are styled "public farmers' markets," "public markets," or "retail farmers' markets."

These community markets have not been successful in all instances. However, the causes of these failures are usually apparent. But where there are a reasonable number of producers who can be interested in attending a market which is conveniently located for the purchasing public, success, in many instances, has been marked. Striking examples of this are offered by several community markets established in Massachusetts. One of these reports that 30 farmers and 1,800 customers were in attendance on a single day, and the business done by this market during the four months thru which it was conducted totaled about $45,000. Another open-air community market in that state reports that within 2½ hours farmers sold 10 tons of produce for $1,500, and that this lot of foodstuffs was carried away by the purchasers—quite an example of the "cash and carry" idea.

Closer Contact of City With Country

The sight of town or city people coming into direct business dealings with food producers is a somewhat novel one to a great many people. That there is much to be gained by each party to this meeting of country and city cannot be denied, since a better understanding almost always results from such meeting of citizens whose lives are, seemingly, quite a little way apart. A very considerable amount of satisfaction is afforded both the seller and the purchaser, in that the former derives better financial returns for his produce than if he had sold to the wholesale or retail dealers, and the buyer feels that she—for it is almost always the woman of the house who does the daily marketing—is more surely obtaining the family's food supplies in a fresher state and at prices that do not carry as much profit to the seller as if her purchases had been made from the retailer.

This direct contact with the producers gives the housewife a larger outlook upon life, thru the acquaintance with folks living in a life circle somewhat removed from her own, and affords her the opportunity of establishing what may be termed "a link back to the land," since thru this acquaintance with some farmer salesman she—subconsciously, tho it may be—has a real, direct and tangible interest in "the country." This is a state of mind somewhat difficult, perhaps, to define, yet one of whose existence many town and city people will testify. The city buyer soon knows her farmer-salesman, learning little by little thru the ordinary run of selling and buying talk this and that detail about his farm, something of his family and their life. Very soon, too, the farmer-salesman learns the special likes of his regular customers, and it follows, in natural course, that should his farm or garden afford some item of food just a little more desirable and tempting than the usual run found in market, then the "human equation" comes into play and this choice food item is saved and brought to friend-customer in the community market; or else, perhaps, it may be only a bunch of real country flowers, or a bunch of autumn leaves to make more pleasant the stuffy city house, yet the friendly business relation is more firmly established.

And what a place for the exchange of the day's news! It is said of men that they make a "cold, business proposition" of their buying, but a woman seldom buys without mixing thru the humdrum business talk other items of conversation. The community market becomes, to some extent, the community meeting place—the exchange mart of a community with a larger field of interest than before this community market idea was made a part of the town's life.

A CORNER OF THE COMMUNITY MARKET, NORTHAMPTON, MASS.

The Future of the Community Market

Will the community market succeed and continue? That depends. If the territory about the town or city has a fairly numerous lot of small farmers, and their interest is enlisted so as to assure their attendance with assortments of vegetables, poultry and dairy products that will favorably compare in variety, condition and price with the offerings of the regular markets and stores, it appears—taking the history of community markets which were conducted last season—that a sufficient purchasing public will be present to insure the success of the venture.

However, the community market does not appeal, as a rule, to the farmer who grows and has to market any considerable amount of produce. Since his time is usually more employed by work on his farm than is that of the small grower, he figures that it is to his advantage to shift the greater part of his marketing work to the retailer. Usually he considers that the difference between wholesale and retail prices is not sufficient to offset the value of an equal amount of time devoted to his regular farm work. The small producer, it appears, whose time is not so fully occupied with actual farming operations, often finds it profitable to devote a part of certain days to thus disposing of his products, taking the difference between wholesale and retail prices for his service as salesman.

Community markets require as the first essentials for success three factors—producers, produce and purchasers. These factors being present and subject to congregation at some convenient location in the town or city, then the foundation of a community market is laid. No business proposition, however, runs itself,—and this is essentially a business proposition,—and the lessons to be drawn from the failures and the successes should be fully considered. The first adjunct to the three essentials above noted is that some public-spirited organization, say the Chamber of Commerce or some woman's club, becomes the moving spirit in establishing or urging upon the city government the establishment of the market and enlisting the coöperation of the gardeners and consumers. After a suitable site has been secured, the fitting up of the market is a simple matter. A shed roof for protection of both buyers and sellers is desirable, tho not essential. Simple knock-down counters or tables for the display of the vegetables and other products may be provided, or sales may be made direct from the wagons.

Any plan that assists in keeping prices within the range of wholesale and retail store quotations works for the success of the market. Among these plans the blackboard giving wholesale and retail store prices as a guide has been tried at a number of community markets, the farmers and customers usually making use of the blackboard quotations in their dealings. Prices at the community market must be higher than wholesale quotations to attract farmers, whereas if they are not lower than at retail stores the customers gain nothing for their trouble in making purchases in person from the market.

Experience shows that there always develops need for a market master. There are such things as reasonable rules for the conduct of these markets: regulations as to allotted selling places, a uniform opening hour, no price fixing or profiteering, fair weights and measures, no "hawking" or loud solicitation of trade, and the proper disposal of refuse.

Whether the market is to be held daily or less frequently is a question to be determined by local conditions of supply and demand. In most places a market on two or three days a week will suffice. Better to have a flourishing market for short hours on two days a week than an unthrifty one on three or more days.

Experience indicates that the community market will not wholly take the place of the wholesale farmers' market, nor will it ever eliminate the need of the established agencies of wholesale and retail distribution, but that it does have its sphere of usefulness. Owing to the necessity of shipping many staple foods from distant fields of production and the custom of limiting, so far as practicable, the sales in these community markets to certain fresh foodstuffs produced in the neighborhood, other marketing methods will continue. In communities that do not have a retail farmers' market but do have the essentials of producers. produce and purchasers, also a civic organization with sufficient public spirit to take up the question of establishing a community market, the winter and spring months offer a fine opportunity for doing the necessary preliminary work. In some of the failures noted, this preliminary work of interesting the farmers and consumers was not undertaken until after the market season was well advanced, the producers and consumers having already made their marketing arrangements for the ensuing months.

Community markets are not to be regarded, so investigators conclude, as a cure-all for every undesirable feature that may now exist in our present marketing systems. If properly supported and conducted, they will, it is indicated, prove advantageous to both producers and consumers. These markets are democratic in high degree, for milady of the limousine does mix with the woman who "carries her own.'

Seattle Purchases $15,000,000 Street Railway System

By Thomas R. Murphine
Superintendent, Department of Public Utilities, Seattle, Wash.

SOME years ago the Puget Sound Traction, Light & Power Company, operating most of the privately owned street railway lines in Seattle, filed with the Public Service Commission of the state of Washington an application to be relieved from certain franchise obligations relative to paving of its right of way, payment of proportion of its gross earnings, and payment of bridge rental and other franchise obligations. Because of this pending application the company did not comply with the franchise obligations until after a decision had been rendered by the Public Service Commission in a similar case coming up from the city of Tacoma, wherein the Public Service Commission decided adversely to the railway company's contention.

The city of Seattle also was successful in its various suits in the Superior and the Supreme Courts of the state to enforce payment of gross earnings, taxes and payment of proportion of bridge rental. The long record of litigation between this company and the city resulted in the rapid crystalizing of public sentiment to a point where it was shown that the Puget Sound Traction, Light & Power Company could no longer enjoy the good will necessary to operate its street railway property.

The company was also in dispute with its employes as to a proper scale of wages, and was unable at the scale of wages it was paying to secure an adequate number of men to operate its cars; it had as much as 20 per cent of its equipment in the barns at one time, altho these cars were imperatively needed to take care of the transportation of the shipyard workers. The city officials endeavored to adjust in an amicable manner the points at issue between the company and the city in order that better service might be provided for the public, and on July 6, 1918, Mayor Hanson sent the traction company a communication in which he indicated his willingness to cooperate with the company in every way, even waiving for the period of the war certain franchise obligations, and also cooperating with the company so that operating economies would be effected in the following manner:

(a) Inauguration of system of skip-stops by which the company expected to save $100,000 per year.

(b) Elimination of street congestion due to standing and parking of motor cars at curbs. This the company expected would result in a saving of approximately $100,000 per year, as a faster running time could be maintained thru the business section.

(c) Permission from the city to use new bridge in the north section of the city, by which faster running time could be made.

(d) Transfer exchange between the Municipal Railway lines and the company's lines.

(e) The right to use idle cars of the Municipal Railways on a fair rental basis.

(f) Emergency interchange of power between city and company.

(g) Assistance in staggering of school hours and shopping hours to relieve peak loads.

(h) Extra charge of one cent for transfers on certain lines, which would mean a probable extra revenue of $20,000 per year to the company.

(i) Discontinuance of service on certain lines where service was being maintained only to hold franchise.

(j) Relief during the period of war from compliance with the paving obligations of the company's franchises. The unfulfilled paving obligations to this date would have required the expenditure of approximately $400,000.

These concessions were to be contingent upon the company's consenting to increase the pay of its employes so that $4 would be the minimum wage for eight hours, and also to pay its past due percentage of gross earnings and to operate all the cars available.

The city then entered into conference with the company on the points involved, and on July 11, 1918, the City Council adopted a recommendation of the Committee of the Whole, reading as follows:

"That it is the sense of the City Council that the Puget Sound Traction, Light & Power Company be permitted to earn on its railway system during the period of the war an average net amount equal to that earned during the years 1913, 1914, 1915, 1916 and 1917, and that the Superintendent of Public Utilities be appointed to report to the Council what increase of fare, or other modifications in the charges of fare, should be made to enable it to provide adequate service to the public and fair conditions to employes, and that he be authorized to employ such expert assistance as he may find necessary for such purposes."

In compliance with this recommendation, the Department of Public Utilities submitted on August 17, 1918, a report to the City Council.

During the discussion of this report, Mayor Hanson made an offer to lease for the period of the war the operating street railway property of the company upon the understanding that the property was to be kept in as good condition as when turned over to the city; that the company would receive a net return equal to the average net return it had earned on its properties for the last four preceding years; and that the city of Seattle would purchase direct current power for the railway system from the company at the rate of one cent per kilowatt hour on the trolley feeder lines.

The City Council on September 6, 1918, offered to purchase the operating street railway property of the company in the city for the sum of $15,000,000 (which was the amount carried on the books of the street railway company as the value of its railway property), payable in utility bonds bearing interest at the rate of five per cent per annum, payable semi-annually, and to purchase direct current power from the company at the rate of one cent per kilowatt hour on the trolley feeders.

On September 13, 1918, the company advised that the price named in the city's offer was satisfactory and that the company was ready to settle the details of the transaction at an early date.

On January 8, 1919, the ordinance providing for the acquisition of the street railway lines of the Puget Sound Traction, Light & Power Company was approved. The ordinance provides that the purchase price of $15,000,000 shall be in utility bonds, which shall bear 5 per cent interest payable semi-annually on the first days of March and September, and also provides for the retirement of the bonds at the rate of $833,000 a year, beginning February 1, 1922, to and including the year 1939, when the final payment of $839,000 shall be paid.

The ordinance in the matter of the payment of interest charges and rates of fare provides as follows:

"The city of Seattle further binds itself to establish and maintain rates for transportation upon such municipal street railway systems which shall provide sufficient revenues to permit such sums being paid into such special fund which the city has pledged to be set aside semi-annually for interest, and annually for principal, as herein provided, to be applied to the payment of principal and interest of the bonds herein authorized, until such bonds have been paid in full."

In the litigation incident to the purchase of this line the city of Seattle was successful in the Superior Court. The decision rendered by the Supreme Court of the state on March 5, 1919, confirmed the legality of the proceedings and resulted in the taking over of the lines on April 1, with municipal operation beginning at 11 P. M., March 31, 1919. Express service to cut down the time from the center of the city to virtually all outlying residential districts is the first proposed improvement.

Dynamite Removes Concrete Pavement at Low Cost

Some time ago it became necessary for the city of Warren, Pa., to remove approximately 213 square yards of concrete pavement. The concrete was from 6 to 8 inches thick, and when the first attempt was made to remove it, it proved to be of better quality than the average that had been laid in the town. The first attempt to remove the concrete was by hand, which was found to be too slow a process. The only means by which it was possible to make any headway at all was to undermine the concrete for a certain distance and break it down with sledges. This method also proved too slow, so dynamite was used to rapidly shatter the concrete pavement.

The cost of removing the 213 square yards of concrete pavement was as follows:

35 pounds of dynamite @ 40 cents...	$14.00
1 operator for 6 days @ $6.00.......	36.00
2 helpers, 12 days @ $3.50..........	42.00
Total	$92.00

Cost per square yard, 43 cents.

Acknowledgment.—Cost data furnished by Alson Rogers, Boro Engineer, Warren, Pa.

The New Street Lighting System in the City of Niagara Falls, N. Y.

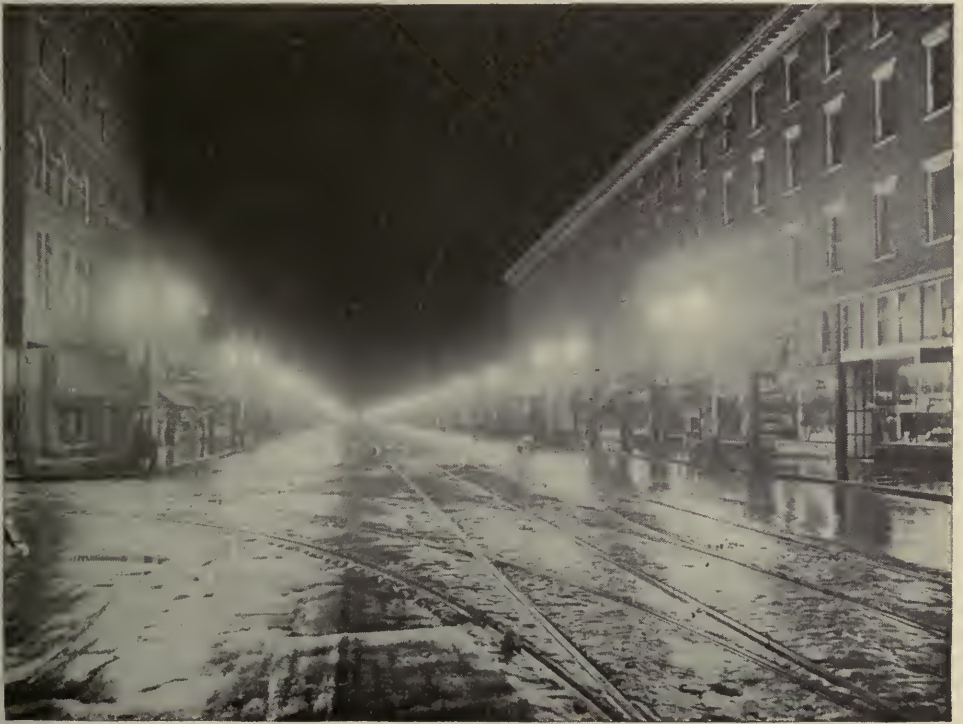
By E. J. Fort
City Manager, Niagara Falls, N. Y.

IN a city where electric current is as cheap and abundant as it is in Niagara Falls, it would seem natural to expect that this condition would be made evident by a generous display of light for advertising, for decorative street lighting on the main thorofares, and by a high standard of street lighting generally. This city has not yet attained the size, importance and affluence which warrants a genuine "white way" or the extreme in commercial advertising found in the neighborhood of Broadway and 42d Street, New York, but as regards all other features of adequate lighting, it is fully abreast of the times. Its main thorofare for a length of two miles is ablaze with light; the residence streets in general are illuminated so that even on the darkest night the way home is made easy for the most belated wayfarer.

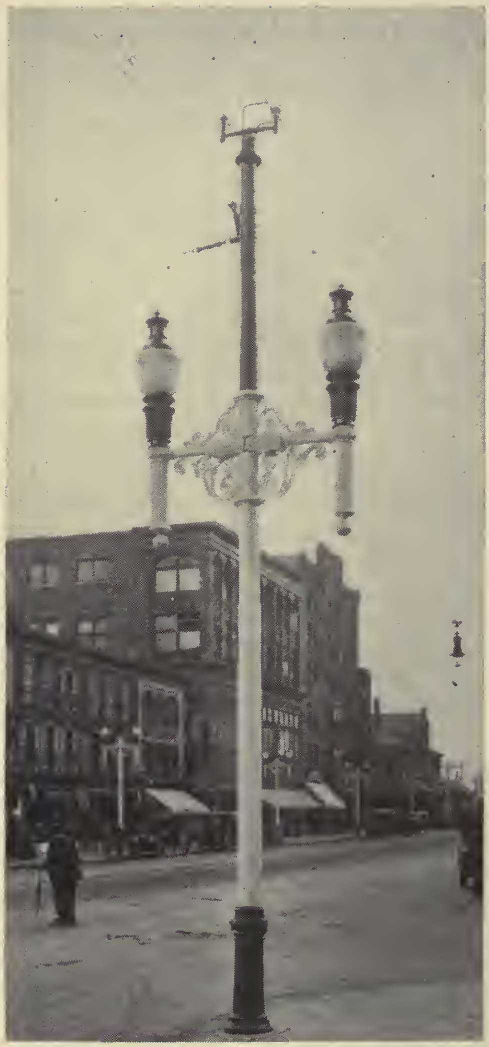
A high standard of street lighting is without doubt worth all it costs. It improves immensely the appearance of the city, it increases civic pride and public interest in municipal affairs. It is a deterrent to vice and crime, and it adds greatly to the comfort and convenience of the public.

Some Old Street Lamps Retained in Service

Falls Street from West Street westerly, Third Street from Falls Street to Main Street, and Main Street from Third Street to the Suspension Bridge, which are the main business thorofares, have an independent system of decorative lighting which



NIGHT VIEW OF FALLS STREET, NIAGARA FALLS, N. Y., SHOWING ILLUMINATION BY ORNAMENTAL LUMINOUS ARC LAMPS



STANDARD USED FOR LUMINOUS ARC LAMPS IN NIAGARA FALLS, N. Y.

is not included in the contract for the remaining streets. The lamps used are General Electric 6.6-ampere luminous arc lamps, and are placed in pairs upon brackets fastened to iron trolley posts at intervals of from 70 to 120 feet on each side of the streets. They are furnished with Alba globes and are highly decorative in character.*

Under the terms of the contract with the Niagara Electric Service Corporation for lighting the residence streets of the city, which expired December 31, 1918, two styles of lamps were made use of. The older portions of the city, with the exception of the three main business thorofares, were lighted by 4-ampere Magnetite arc lamps of about 600 candle-power—lamps which are used in many municipalities thruout the country and whose good features are generally known to those who are interested in street lighting. The white light and the star-like appearance of the arc are decorative in effect. The quantity of light produced for the power consumed is satisfactory as compared with other lamps. In Niagara Falls they have proved very satisfactory. The streets have been well lighted, and there are many who consider these lamps the most desirable type for this service. They are hung from mast arms attached to wooden poles, which are used by both telephone and electric light wires. The lamps hang approximately over the center of the street. There are still about 440 of these lamps in use in the city, and they will continue in use thruout the life of the present contract, five years.

Changes in the Installation

The residential districts of the city were lighted by enclosed A. C. series arc lamps, supposed to be 600-candle-power. In service these lamps proved to be unsatisfactory. The illumination was insufficient, for they were seldom in condition to produce the rated candle-power. They presented a rather shabby appearance. Upon residence streets these lamps were placed at distances of 300 to 350 feet apart.

The new contract provides for the replacement of this style of lamp entirely by the more recent type of 600-candle-power Mazda lamps in a Novalux pendent unit with stippled globe and Holophane dome refractor. In addition to the fact that the new lamp presents a better appearance, its candle-power is very much greater than that of the old A. C. arc lamp, and the light is distributed over the street surface much more effectively. It is a soft, steady light, and no dirt accumulates within the globes to cause objectionable shadows. The Holophane dome refractor distributes the light evenly upon the street surface, and the stippled globe eliminates glares, reduces absorption to a minimum and gives a bright, sparkling light. It was tried out in actual service in the city for several months and its behavior was carefully noted, and advice from those who have had extensive experience with the performance of Mazda lamps of various types used for street lighting was obtained before its adoption was decided upon. From the favorable comments of residents of the streets where the lamps have been installed, it is fair to assume they are giving entire satisfaction.

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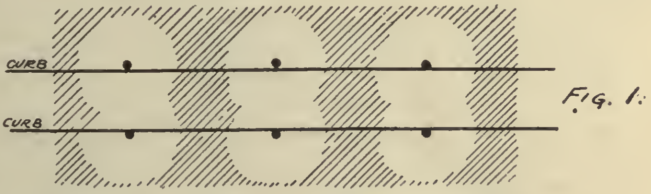
* See The American City, February, 1914, page 183.

The Niagara Falls Power Company supplies the current and the Niagara Electric Service Corporation cares for the lights, so that the expense of maintenance to the city is very small.

New Globe Gives Useful Distribution

IT has always been the aim of the South Park Commissioners, of Chicago, Ill., to maintain the most efficient lighting facilities obtainable thruout the district under their jurisdiction. From time to time new ornamental lighting devices and new types of shades have been tried out and continued in use if found satisfactory, and now a new scheme of reflectors has been devised and found successful.

The novel feature of this light consists in collecting the upward and downward rays and reflecting them into predetermined useful directions, preferably parallel with the street or drive, as shown in Figure 2. In the usual type of spherical globe all the rays in the upper hemisphere are lost, as far as useful lighting is concerned. In lanterns or lamps equipped with the usual form of reflector, the rays are reflected uniformly in a circular area around the lamp, as shown in Figure 1 of the diagram.



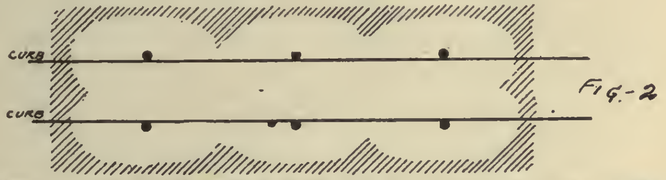


FIG. 1.—UNIFORM REFLECTION OF RAYS IN CIRCULAR AREA AROUND LAMP

FIG. 2.—UPWARD AND DOWNWARD RAYS COLLECTED AND REFLECTED INTO USEFUL DIRECTIONS

The upper reflector, when assembled, fits closely over a tungsten lamp and collects all direct rays as well as reflected rays from the lower reflector, sending them in the useful direction along the street. The lower reflector is parabolic, designed to direct vertically against the upper reflector all the rays that strike it. The lamp is set in a porcelain socket of standard manufacture, that fits into a specially designed porcelain combination cable terminal and receptacle in which the lead-covered cable terminates, the whole making a safe and lasting installation.

The lantern is constructed entirely of cast iron and glass, including the reflectors, which are white, fire-enameled, and are not affected by heat or rough usage. Chipped glass is used, which eliminates glare and does not offer much resistance to the rays. A broken glass panel may be readily replaced by merely tipping over the hinged top, pulling out the broken glass and sliding into its place a new panel, which is held taut by a wire spring clip. This feature makes replacement simple and inexpensive when compared with the renewal of the old-style spherical globe when injured so as to be out of service.

Municipal Landing Fields for Air Service

A Statement of the War Department's Policy

TO the EDITOR OF THE AMERICAN CITY:

In reply to your letter of the 12th inst., the following statement is made:

The Government is now taking steps to secure coöperation of certain municipalities in the United States in establishing landing fields primarily for the use of the Air Service and aerial mail. On account of the magnitude of the work and the claim that the various cities are likely to put forward as to priority, it has been considered necessary not to include all cities thruout the country at which we ultimately desire to establish landing fields, but to undertake just now only a limited part of the work, more to provide a skeleton, so to speak, of the network, then to fill in the details later.

The following cities have been selected as the ones where we want to establish these fields in the first instance. It will be recognized that some of these are relatively unimportant in size, and perhaps commercially,—but they were selected more on account of location than commercial importance. The Government also desires to confine itself at present to cities where the aerial mail service requires stations or where they are required for the cross-country use of the Air Service. It is not intended that such limitations should in any way restrict the establishing of other landing fields at cities or towns where conditions warrant such actions. The cities selected thus far are:

Boston, Mass.
New York City
Richmond, Va.
Raleigh, N. C.
Columbia, S. C.
Augusta, Ga.
Macon, Ga.
Atlanta, Ga.
Kissimee, Fla.
Mobile, Ala.
New Orleans, La.
Baton Rouge, La.
Beaumont, Tex.
Flatonia, Tex.
El Paso, Tex.
Texarcana, Tex.
Columbus, Ohio
Tucson, Ariz.
Phœnix, Ariz.
Yuma, Ariz.
Bakersfield, Cal.
Fresno, Cal.
Buffalo, N. Y.
Syracuse, N. Y.
Albany, N. Y.
Kansas City, Mo.
Oklahoma City, Okla.
Uniontown, Pa.
Daytona, Fla.
Cleveland, Ohio
Chicago, Ill.
Columbus, N. Mex.

Attached are official specifications, classifications and extracts from a letter which has been furnished to the above cities for their guidance and are to be furnished to such other cities as may desire information on this subject.

It will be to the advantage of any municipality favorably located to establish an Air Service terminal for use of the Air Service, as gradually this work will be expanded and cities that have made proper preparation will receive more consideration as regards being placed upon aerial route in view of that fact.

The valuable assistance you are rendering the Air Service thru your progressive magazine is highly appreciated by this department.

By authority of the Director of Air Service,

H. M. HICKAM,
Major, J. M. A., A. S. (A), Chief, Information Group.

Specifications For Municipal Landing Fields

In the selection of landing fields at the different cities thruout the country, special attention should first be given to the following points:

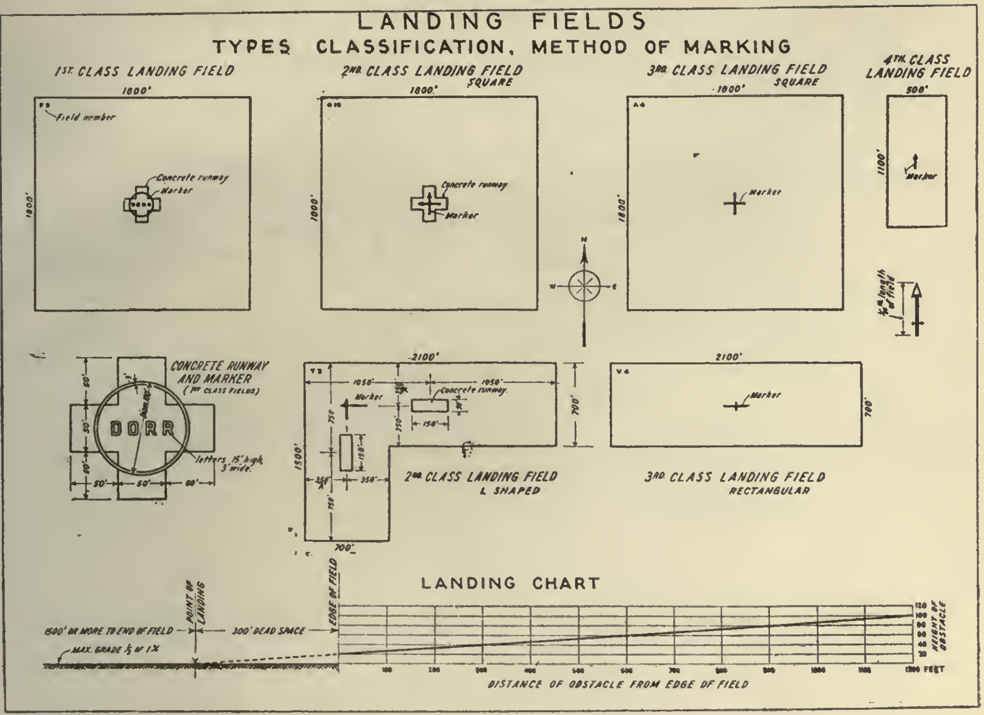
(1) That the position of the field bears some reference to the main aerial routes;
(2) That it is unlikely to be shut in by future building operations;
(3) That it is capable of expansion;
(4) That it is situated close to transportation facilities and water-supply, but not necessarily within the city limits.

The specifications of the field will cover the following points: size, shape, character of ground, approaches, marking, accommodations.

Size.—The minimum size of any municipal landing field will be such as to allow a 600-yard runway in every direction with no obstacles.

Shape.—The best shape for a field would be a square or a rectangle, but this is not absolutely essential. An "L"-shaped field will suffice, provided each arm of the "L" is at least 300 yards wide and 600 yards long. The area of landing grounds on this basis will average 60 acres.

Character of Ground.—The ground should be firm under all weather conditions. A light, porous soil with natural drainage is recommended as the most suitable, covered with close-cropped grass. Fields with clay soil invariably demand special drainage and are unsatisfactory as a rule in wet weather. A concrete cross, 150 feet by 50 feet on each side, provides an excellent wet-weather take-off and landing spot. Tan bark or firm soil would suffice. The surface should be level and smooth, so that ships could normally land upon and taxi across without injury.



Approaches.—All landing fields should be free from surrounding obstacles, such as high buildings, high-tension power lines, trees, etc. The country immediately surrounding the landing field should afford facilities for forced landing in event of engine failure while taking off.

Marking.—A white circle, 100 feet in diameter with a band 3 feet wide, has proved by experience to be an excellent distinctive marking for a landing field. This can be seen at almost any attainable height with clear visibility. It is necessary to keep the marking clear white to make it show up well. This can be done by white-washing from time to time. The name of the station should be marked in chalk letters 15 feet long by 3 feet wide. A wind indication, such as the standard aviation wind cone, should be placed at one corner of field 30 feet off the ground.

Accommodations.—The accommodations at these fields should provide communication by telephone, transportation facilities, gasoline, oil and sundry supplies.

In the selection of these fields it is imperative that future expansion be considered.

CLASSIFICATION OF LANDING FIELDS

Landing fields will be classified according to size, shape and accommodations into four classes:

First Class Landing Field

1. Shall conform with the general specifications as to size and shape or otherwise accepted by the Government.
2. Character of the ground must be such that will allow safe landing and take-off in all kinds of weather. In case of poor drainage, must have a landing cross (see specifications). If L-shaped field, it must have two wet-weather runways corresponding to the bars of the cross for each arm of the L.
3. All approaches clear, allowing for safe landing and take-off.
4. Marking shall be a circle 100 feet in diameter with band 3 feet wide. Name of station and number in letters and figures 15 feet long by 3 feet wide. Number placed in northwest corner of field.
5. The accommodations shall be:
   - (a) Hangar space, wind indicator, tools and other repair equipment
   - (b) Supplies, gasoline, oil, water, sundry spares
   - (c) Telephone communication
   - (d) Transportation facilities
   - (e) Attendants
   - (f) Proper guard and enforcement of field regulations

Second Class Landing Field

[1, 2 and 3 same as for First Class.]

4. Marking shall be a cross arrow with bars 3 feet wide, and length shall be determined by the size of the field. Each bar shall be 90 feet long, provided field allows 600 yards runway. Proportionate length, or 1 to 20 if under or above that. In case of L-shaped field, bars shall cross each other proportionate to

each arm of the L. Cross shall be placed in position, each arm indicating center of runway. Arrow heads shall point north and west. Number of station in figures 15 feet long by 3 feet wide. Number placed in northwest corner of field.

5. The accommodations shall be:
   (a) Hangar space, wind indicator with available tools and other repair equipment
   (b) Supplies, gasoline, oil, water and sundry spares
   (c) Telephone communication
   (d) Near transportation facilities
   (e) Attendants and guard available upon request
   (f) Enforcement of field regulations

Third Class Landing Field

1. Shall conform in general with specifications as to size, shape or otherwise accepted by the Government.
2. The character of ground must be such that will allow safe landing and take-off in all kinds of weather.
3. All approaches clear, allowing for safe landing and take-off.
4. Marking shall be a cross with bars 3 feet wide, and length shall be determined by size of field. Each bar shall be 90 feet long, provided field allows 600 yards runway. Proportionate length, or 1 to 20 if under or above that. In case of L-shaped field, bars shall cross each other proportionate to each arm of the L. Cross shall be placed in position, each arm indicating center of runway. Number of station in figures 15 feet long by 3 feet wide. Number placed in northwest corner of field.
5. Accommodations shall be:
   (a) Supplies available upon request
   (b) Near city or town with available help upon request
   (c) Field regulations with available guard
   (d) Provision for informing pilots of available accommodations

Fourth Class Landing Field

1. Capable of landing only in emergency. Marked with single arrow indicating best approach and longest runway. Arrow 3 feet wide and length based on proportion 1 to 20 or 90 feet for 600 yards runway. Supplies available or not available upon request.

Extracts from Letter of Major General Charles T. Menoher, Director of Air Service, to the Municipalities Solicited

April 30, 1919.

The establishment of landing fields thruout the country, thru coöperation between the Government agencies and the cities concerned, will certainly operate to the advantage of both the Government and the city, because in the rapid development of commercial aviation those cities which have provided the primary facilities for operation of aircraft in their vicinity will have paved the way for local benefits resulting from the development of aerial intercity transportation, express service, mail service, emergency service and local photographic mapping or aerial protection.

In furthering this matter, the Government has adopted the following general policy:

1. The Air Service and Postoffice Department will coöperate fully in establishing municipal landing fields.
2. The Air Service will select the landing fields in coöperation with municipal representatives. The field selected must conform, as far as possible, to the general specifications and will be classed according to detailed specifications.
3. The establishment of the field will be made in accordance with Articles of Agreement to be entered into between the United States Government and the municipality. Neither the Air Service nor the Postoffice Department, the Government agencies mentioned herein, will deal with any private individuals, societies or associations in the matter of landing fields.
4. At present the Government can coöper-

QUENTIN ROOSEVELT MEMORIAL AVIATION FIELD, ALBANY, N. Y.

The man in white in the center is Chauncey D. Hakes, Chairman of the Joint Aviation Committee representing the city authorities and the Albany Chamber of Commerce, whose co-operative effort brought about the establishment of the first municipal landing field

ate only in the establishment of municipal flying fields at cities where the Postoffice Department establishes an aerial mail station and where the Air Service cross-country routes require intermediate stations.

5. Altho the Government must confine itself at present in coöperating in the establishment of municipal landing fields at cities where the aerial mail service requires stations or where stations are required for cross-country use of the Air Service, it is not intended that such limitation should in any way restrict the establishment of other landing fields at cities and towns where local conditions would seem to warrant such action. Wherever such independent action is considered, it is felt that the Air Service should be consulted in the selection of the field, in order that the landing field decided upon by the municipality may meet the specifications for a regular Air Service station, in case future developments lead to its incorporation in the network of fields which the Government assists in establishing.

Should the municipalities mentioned in this letter decide to coöperate with the Government in the matter of establishing landing fields, the Army Air Service, on behalf of the Government, will obligate itself to furnish an expeditionary steel hangar to be erected in the city selected, but at the expense of the municipality. It will be understood that the landing field will be prepared at the expense ot the municipality, which will also bear all the expense necessary in the procurement of personnel, and the maintenance of both the field and the accompanying equipment, exclusive of airplanes.

It will be necessary to maintain at least two men constantly on duty at the field, one of whom will be a motor carburetor and ignition expert and the other an airplane mechanic. The salaries of these men will amount to about $150 each per month. Additional personnel will be required according to the class of the field.

The Motor Truck—Mechanical Jack-of-All-Trades

This Equipment Prominent in Municipal Service in Denver, Colo.

By F. J. Altvater

Highway Commissioner of Denver, Colo.

THE Department of Improvements and Parks in the city of Denver maintains more than 900 miles of streets, of which 705 miles are dirt, 226 miles are surfaced with gravel or crushed rock, and 57.32 miles are pavement.

The Highway Division

The highway division has charge of the rebuilding, resurfacing, grading, repairing, cleaning and all other repair work needed upon all the dirt and surfaced streets, the bridges, culverts and walks, and is called upon to do a great deal of work foreign to street improvement.

Upon this division falls the bulk of all complaints and of all work needed and demanded. When it is considered that the money expended in 1913 amounted to $246,623.90, while the expenditure in 1918 was $295,013.28, I believe that I am warranted in saying that, taking into consideration the growing demands upon this department each year, an increase in wages of 20 per cent, and in cost of materials of 40 per cent, we are securing better results than were secured five years ago for the same amount of money.

During 1918, owing to the war, labor conditions were extremely poor. It was hard to secure good labor. At the slag pit, during the earlier part of the year, it was almost impossible to keep good men, because of the hard work demanded. In May we purchased a portable belt conveyor to take the slag to the crusher. Over this we built a covering, which sheltered the men from the inclement weather and from the hot rays of the sun. We also had the men exchange work at noon, thus making it easier for all concerned. Before the installation of this conveyor, eight men were required to haul slag to the crusher in wheelbarrows to supply three trucks. Now four men do the same work, and take care of one or two more trucks each day. The cost of this conveyor was $1,675, and it paid for its cost before January 1, 1919.

Haulage of slag and gravel and, in fact, of all material, has been done to a great extent by motor trucks. The economical cost during the past year has warranted this department in the purchase of four more 5-ton trucks. For example—a team cost us last year $6 per day, this year $7 per day. This team made an average haul of three loads of 1½ yards to the load per day. Last year this was an average of $1.33 per yard; this year the cost by team will be $1.55 per yard. We had three trucks last year, one of which hauled 5,931 yards of material, another 5,541 yards, and the third 5,842.5 yards. The average operating cost of these trucks was $.766 per yard, as against $1.33 per yard for teams. This $.766 per yard was computed by taking all the charges for repairs, oils, gasoline, chauffeur, interest at 6 per cent, and a depreciation of 33⅓ per cent on two of the trucks, and 15 per cent on the third. We charge a depreciation of 33⅓ per cent for the first year, 25 per cent the second year, 20 per cent the third year, 15 per cent the fourth year, and 6⅓ per cent the fifth year. All truck men claim this is too great a depreciation, but if that were so, then our trucks would show even a greater saving than the credit given them. At the present charge for teams, this department will virtually pay for one of the new trucks each year.

The Street Cleaning Department

In the street cleaning department also large savings were made last year in comparison with 1913 and previous years. In 1913 there was expended by the street cleaning department $149,207.60. In 1918 the division expended $145,398.07. This was due to better methods, the use of more modern equipment and better supervision. We now have at least 30 per cent more territory to cover than in 1913, as there has been considerable paving done on both streets and alleys during the last five years.

This department has 57 miles of paved streets, 70 miles of paved alleys, and more than 500 miles of dirt alleys to clean. The paved streets are cleaned once each twenty-four hours, the work generally being done at night, as there is less delay from traffic and auto congestion and it occasions less annoyance to the public. All paved alleys are cleaned once each week, those in the business district once every twenty-four hours. Dirt alleys are cleaned twice each year, in the spring and in the fall.

During the winter months this division is responsible for removal of snow from paved streets, but in the last two years it has been assisted very materially by the highway division.

In May, 1918, owing to the inability to secure good teams to draw the sweepers,—about as hard work as the ordinary team meets, especially when performed night after night,—we used a motor truck attachment.

The cost of sweeping and flushing the streets from May 15, 1917, to November 15, 1917, was $16,484. During this period one motor flusher was used and the remainder of the cleaning was done by horse-drawn sweepers and flushers.

In the period from May 15, 1918, to November 15, 1918, the cost of sweeping and flushing the streets was $11,523.13. During this period two auto flushers and three horse-drawn flushers were used.

This resulted in a saving of $3,581.98 in favor of truck sweeping. As we paid but $4,750 for the five trucks, it can readily be seen that before one year has passed the trucks have more than paid for themselves. Especially is this shown to be true when the fact is taken into consideration that during the six months from November to May there is considerably more sweeping done than in the other six months.

The division has recently purchased two 2-ton trucks for the heaviest part of the truck sweeping. These trucks not only are used to draw sweepers, but, when not so engaged, are attached to wagons, or other apparatus, and are generally in use sixteen hours every day. The two new 2-ton trucks were recently delivered. Upon placing them in service it became necessary to transfer ten teams to other work, as they did the work of these teams in an eight-hour day.

The Sprinkling Division

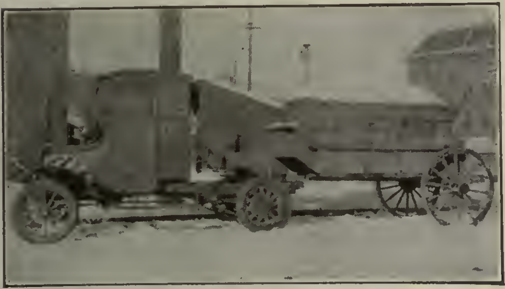
The sprinkling division has had greater demands made upon it for the last few years than ever before, due no doubt to the greater number of streets, enlargement of the residence districts, and to heavy and fast automobile traffic. In addition, the last two years have been deficient in rainfall, and thus thru the summer months the division

THE DUTY OF THE OILER IN WINTER IS TO HAUL SNOW

OILING MACHINE IN ACTION ON SIXTEENTH AVENUE

ONE OF THE BIG AUTO SPRINKLERS HAULING SNOW

DENVER HAS TWO OF THESE COMBINATION SPRINKLER-FLUSHERS



ONE OF THE LIGHT TRUCKS HAULING SNOW

ONE OF THE LIGHT TRUCKS USED FOR STREET CLEANING

THE SWEEPERS KILLED MORE HORSES THAN ANY OTHER WORK

THE OLD-STYLE HORSE-DRAWN SPRINKLING CARTS has had little help from nature.

During 1918 we purchased one more combination auto sprinkler and flusher, which we received in May. This assisted greatly, as it gave us three auto sprinklers which worked from 5 o'clock in the morning until 8 o'clock at night. Had it not been necessary at that time to allow the street cleaning division the use of them, we could have sprinkled with them until later, as the demand for night sprinkling has been very great the last few years. Advancement of the clock last year also caused us considerable extra expense. We were compelled to get out with our sprinklers earlier in the morning, and at night it was absolutely necessary to remain out longer, as auto owners, returning home from work earlier, took advantage of the long twilight hours and motored to their hearts' content.

It seemed almost impossible to keep some of the streets wet down, so the department ordered and placed on various streets 107,245 gallons of road oil.

Our division at no time has attempted to build streets with this road oil, but has merely placed enough on the streets to obviate sprinkling. Our many sunny days and dry climate are conducive to the formation of dust. If we can solve this question to the satisfaction of the home owners and the auto owners, we shall have gained a great end.

We had varied success with the application of oil. In some places where at first it appeared to be the greatest failure it has proved the greatest success, as on West Thirty-third Avenue. We thought that we could never get it to stand there, yet after the winter's storms it resembles paving more than anything ever before tried, and the residents there have had very little dust. Taken as a whole, and considering that last year was our first real trial with oil, we believe that it will prove a success and can be made of lasting benefit.

The cost of oiling last year was practically $1,000 per mile. When it is taken into consideration that this oil keeps the street dustless, or practically so, for twenty-four hours each day, while the dust cannot be kept from the street for more than thirty minutes after a sprinkler has passed, we believe we are warranted in making such experiments with oil as we have made. The cost has not been greater for oiling than it would have been for sprinkling and maintenance after sprinkling.

Our greatest trouble has been with small holes or patches that appear without apparent reason. If this can be eliminated,—and it is our opinion that we shall find the way,—then the oiled street will be the best that can be obtained without pavement.

The Asphalt Plant

During the past year the old asphalt plant was found to be inadequate for the needs of this department, and an old contractor's plant was purchased for $20,000. This plant has been overhauled, and will prove a great asset. At the old plant but one car of sand, coal or other material could be unloaded at one time, and there was no storage capacity. At the new plant, which occupies practically five acres of ground, there is plenty of space for many car-loads of material. We have on hand more than 30 car-loads of lime rock, 10 to 15 car-loads of crushed stone, and about 1,000 tons of asphalt. There is plenty of room for coal and sand. The plant is modern in every way, and has a 125-horse-power Corliss engine, together with a 150-horse-power boiler.

The sewer flushing force has kept the sewers in excellent condition, and has always been ready to respond at a moment's call. A new truck for general all-around purposes was purchased.

Repair Work

On January 1, 1919, the city general repair shops were consolidated with the highway department shops and will be conducted by this department in the future.

Previously to this all of the department's work had been done at the city shops, with the exception of a small amount done at the street cleaning headquarters.

The moving and consolidating of this shop has caused considerable work, but now we are all coöperating and are accomplishing a great amount of work.

On February 15 the highway shop had a stock worth more than $17,000. We have adopted a new idea, by the creation of a storeroom for the Department of Improvements and Parks. It will prove of great benefit to the Department. At this shop we are also making all necessary wagons, sweepers, equipment and tools.

Chamber of Commerce Buildings—Their Uses and Possibilities

The Sixth Instalment of a Series of Items on the Homes of Commercial Organizations, with Descriptions of Their Club Facilities and Their Uses as Community Centers

Syracuse, N. Y.—A consolidation of the Syracuse Chamber of Commerce with the local City Club took place in October, 1918, and enabled the Chamber to offer its members the use of the excellent club facilities the old City Club building contains. The Chamber of Commerce took a five-year lease on the building, which is privately owned, and for which it pays an annual rental of $9,000. The handsome rooms lend themselves well to the comradeship that is so necessary to the success of any association of men.

A comfortable, roomy lounge occupies the front half of the first floor, and in the rear half are the billiard- and poolroom, the card room and the cloak room. The dining-room, with a seating capacity of 325, and the kitchen occupy all of the second floor. On the third floor are the executive offices, which include separate rooms for the secretary, the assistant secretary, the president, and the traffic manager, and a large room for the office force. On this floor are also four committee rooms, a directors' room and an assembly room seating 125. The directors' room can be thrown into the assembly room and accommodate 50 people more.

The Chamber found it needed still more space and recently leased a portion of the adjoining building, which contains two stories, for $900 a year. The rear half of the second floor in this building will house the kitchen, which will be taken from its present position in the rear of the main dining-room. The front portion of the second floor has a private dining-room seating 60 which is used as a committee room and for small dinners, the entrance to which is thru the front part of the dining-room in the main building. The card room and cloak room will be moved from the first floor of the main building to the rear of the first floor of the adjoining building.

The lounge, the six bowling alleys, the eight pool- and billiard-tables, the card room and the restaurant provide every facility for an agreeable social life in the building among the members. Those features (excluding the lounge) and the cigar and candy counters are the organization's chief sources of revenue aside from the membership dues. No outside organization is housed in the building except the New York State Forestry Association, which is furnished with space rental free.

THE HOME OF THE SYRACUSE CHAMBER OF COMMERCE

The building has become quite a community center thru the facilities offered by the committee rooms, the assembly room and the restaurant. A small entertainment fund is provided for in the regular budget, altho the majority of the entertainment furnished by the Chamber of Commerce pays for itself.

* * * *

Niagara Falls, N. Y.—The Niagara Falls Chamber of Commerce occupies the first and second floors and basement (about 4,800 square feet) of the three-story Masonic building in which it is quartered, at an annual rental of $2,400. The furniture, the office equipment, and the equipment of the assembly hall and of the dining-room and kitchen cost approximately $7,800.

On the first floor are the offices of the secretary, the assistant secretaries, the stenographers, the cashier, the credit department, a storeroom and a workroom. The assembly room, which has a seating capacity of 400, is also on this floor. On the second floor are the dining-room and the kitchen. The dining-room space is augmented by a balcony on one side, where sixty people can be accommodated at tables. In the basement are the men's

THE BUILDING IN WHICH THE NIAGARA FALLS CHAMBER OF COMMERCE IS LOCATED toilet room and a large storeroom. The Chamber of Commerce occupies all of this space except when providing temporary office space to certain individuals or organizations. The assembly hall and the dining-room are used a great deal for meetings of various kinds and for evening dinners. These rooms are so large that several meetings may be held at the same time.

The value of luncheon and dining facilities to a commercial organization has been demonstrated at the Niagara Falls Chamber of Commerce, where the dining-room is proving an invaluable means of bringing members together and creating and promoting civic action. The Chamber has devoted its best energies to making the restaurant an attractive feature of the establishment. Its drawing power is found in the congenial atmosphere, the attractive furnishings and equipment, and the excellent quality of the food. Committees, groups assembled for conference, and clubs are making the dining-room a noon hour rendezvous.

The luncheon service is operated on the self-service plan. This engenders a friendly and comradelike spirit which is infectious and has gone far to popularize the dining-room.

The rooms of the Chamber of Commerce constitute a real community center. Moving pictures are frequently shown in the assembly hall, and other entertainment is often provided.

THE DANVILLE, ILL., CHAMBER OF COMMERCE RENTS THIS BUILDING

* * * *

Danville, Ill.—The Danville Chamber of Commerce is located in the old Post Office Building, a three-story-and-basement structure owned by a private estate. The Chamber of Commerce rents the entire building, which contains about 11,300 square feet of space. Its offices and the auditorium occupy about 5,900 square feet. In this space are the Secretary's office, the general office, the Directors' room, and the auditorium measuring 80 x 40 feet and having a seating capacity of 350.

Affiliated with the Chamber and having quarters in the building are the Vermilion County Farm Bureau; the Vermilion County Live Stock and Breeders' Association; the Home Service Department and clerical offices of the Vermilion County Chapter of the American Red Cross; the local office of the United States Employment Service; the Bureau for Returning Soldiers and Sailors; the Home Bureau; the Illinois-Indiana Fair Association; the Danville Master Plumbers' Association; the Retail Grocers' Division of the Chamber of Commerce; the Real Estate Board; the Danville Municipal Band; also the Western Motion Picture Company and the Standard Blue Print and Office Supply Company. No rental is charged to any of these, except the last two, whose offices are separate and in no way connected with the Chamber of Commerce.

THE COMMUNITY HOUSE OF THE PARIS, ILL., CHAMBER OF COMMERCE

The Chamber of Commerce does not operate a restaurant, but in the basement is a very large kitchen which was used as a canning kitchen during the war under the direction of the State Council of Defense, from which dinners and luncheons are served for business meetings, directors' conferences, soldiers' homecoming and other patriotic affairs.

The auditorium is on the second floor and is used by practically every organization in the city for gatherings of different kinds, including Chamber of Commerce meetings, recitals, school affairs, lodge meetings, etc. The building is regarded as a live community center.

* * * *

Paris, Ill.—With the aid of the Board of County Supervisors, the Paris Chamber of Commerce has maintained a rest room in connection with its offices since May 1, 1915. In the spring of 1918 the Chamber moved its offices

ONE OF THE LARGE COMMITTEE ROOMS IN THE OMAHA CHAMBER OF COMMERCE

and the rest room into the two lower floors of the three-story Masonic Temple illustrated herewith. The new quarters are known as the Community House and Chamber of Commerce. The Chamber pays an annual rental of $1,000 for the two floors. The Board of County Supervisors contributes $600 a year toward the maintenance of the rest room, which is in charge of a matron.

The Chamber of Commerce uses about 12,000 square feet of space for its work. On the first floor are the executive offices, the Directors' room, the check room, and the rest room; on the second floor is an auditorium having a seating capacity of 500.

The following organizations whose work is closely allied with that of the Chamber of Commerce are accommodated free of charge: the Edgar County Chapter of the Red Cross, the County Council of Defense, the Association of War Mothers, the Liberty Chorus, the Edgar County branch of the United States Employment Service, the National Women's Council of Defense, the Boy Scouts, the Community Nurse Association, the Edgar County Bird House Association, and the Foundation Fund Association.

The Chamber does not operate a regular restaurant, but there is a small kitchen connected with the auditorium, which makes it possible to hold weekly luncheons for the members in the building. The auditorium is very much in use, both for banquets and public meetings. During the war all the large public meetings that were conducted in behalf of the Liberty Loans, the Red Cross, etc., were held in this hall.

Paris is located in the heart of a great agricultural district. Being the largest city in Edgar County, it is the trading center, and the city keenly felt the need of a waiting-room for the shoppers and their families, many of whom spend the entire day in the city. The community house was therefore established for the benefit of the people of the entire county as well as for the residents of Paris. The waiting-room is furnished with comfortable chairs and tables for reading and writing, telephone booths, etc. Back of the waiting-room is a ladies' parlor, and opening from this room is a nursery containing a number of cribs. There is also a check-room where parcels may be left in safety during the visitors' stay in the city.

* * * *

OMAHA. NEBR.—The Omaha Chamber of Commerce occupies the seventeenth and eighteenth floors (approximately 18,000 square feet of space) of the Woodmen of the World Building, for which it pays an annual rental of $11,500. On the seventeenth floor are the private offices of the Commissioner, the managers of the Traffic, Publicity, and Industrial departments, and the general offices. On this floor are also the library, the large lounging-room, the billiard-room, containing ten tables, and the main lobby.

The Chamber's dining-room, kitchen and committee rooms occupy the entire eighteenth floor. The dining-room can be enlarged to take care of six or seven hundred people at special entertainments.

The average attendance the year round at the noon-day luncheon, which is the only meal served regularly, is approximately 300. Practically all the committee meetings are held during the noon hour.

The following organizations closely allied with the Chamber of Commerce occupy space within its quarters rental free: the Omaha Manufacturers' Association, the Omaha Hay Exchange, and the Soldiers' and Sailors' Employment Bureau. The Associated Retailers, the Real Estate Board, the Ad and Selling League, the Ben Franklin Club, the Kiwanis Club, and many similar organizations use the rooms for meetings and dinners. They do not pay for this privilege excepting for evening affairs.

The Chamber's chief sources of revenue are the membership dues and the initiation fees. Subscriptions are called for when money is desired for some specific activity. The dining-room is not run for profit, and the account is nearly always on the wrong side of the ledger, but it occasionally yields a little revenue. No rentals are received except from the few outside organizations referred to above. who pay for the use of the rooms for special meetings or entertainments.

The Chamber's quarters, especially the main dining-room, are very generally employed for community meetings. There is no regular auditorium, but the main dining-room serves the purpose admirably. The expense of all entertainments not borne by the members is disbursed out of the Chamber's general funds.

TWO SMALL COMMITTEE ROOMS IN THE OMAHA CHAMBER OF COMMERCE

War Camp Community Service Backs Memorial Building Movement

National Committee on Memorial Buildings Unites with War Camp Community Service in Advocating Living Tributes

THE War Camp Community Service, which has won for itself so large a place in the hearts of the nation's fighters, is already entering upon the task of carrying forward into peace times the splendid spirit of fellowship engendered in the War Camp cities. As a definite part of this enlarged program, there has been created a Bureau of Memorial Buildings to take over and expand the work of the National Committee on Memorial Buildings. This National Committee, composed of one hundred representative men and women from all parts of the country and all walks of life, now becomes the Advisory Committee on Memorial Buildings of the War Camp Community Service coöperating with the new Bureau.

The movement for the erection of living tributes, as exemplified in memorial community houses, is now firmly established thruout the country. From reports already received, there is evidence that nearly two hundred communities have definitely decided that their war memorials shall take this new form. Hundreds of other cities and towns are seriously considering the community house in formulating their plans for commemorating the service of their soldiers and sailors. Thru this new bureau, the War Camp Community Service is publishing a series of bulletins dealing with the various phases of memorial community buildings. It is laying plans for a nation-wide campaign of publicity thru the newspapers and magazines, and the Bureau serves as a clearing-house of information.

The War Camp Community Service will not assist financially in the actual erection of any of these memorial buildings. It will, however, so far as possible, coöperate with local communities in several ways. Such assistance will include the supplying of bulletins; suggestions as to news stories for local campaigns; information as to how the architectural problems may best be handled; ideas in the way of posters, illustrations and exhibits to be used during the drive for funds. In some instances speakers and advisers will be available.

The organization of the National Committee on Memorial Buildings was the outgrowth of the proposal in the September, 1918, issue of THE AMERICAN CITY that Liberty Buildings be erected as war memorials. This suggestion met with almost instant approval from a large number of citizens and organizations. The War Camp Community Service, THE AMERICAN CITY, the Art Alliance of America, the National Institute of Social Sciences, the Municipal Art Society of New York, and other kindred organizations created a temporary committee thru whose efforts the nation-wide machinery was started. As the work of this committee progressed it became apparent that to a large extent it would coincide with the activities of the War Camp Community Service. Accordingly, in order to avoid any waste of effort or working at cross purposes, the union of the two organizations was brought about. Harrison Gray Otis, who has served as executive secretary of the National Committee on Memorial Buildings, has been retained as manager of the Bureau of Memorial Buildings of the War Camp Community Service. The officers of the National Advisory Committee are as follows:

Chairman, Paul D. Cravath; vice-chairmen, George Gordon Battle, Mrs. John Hays Hammond, Mrs. Ripley Hitchcock and George Foster Peabody; secretary, Harold S. Buttenheim; and treasurer, Frank A. Vanderlip. The honorary officers are: Chairman, Hon. Franklin K. Lane, Secretary of the Interior; vice-chairmen, Governor Ben A. Alcott of Oregon, Governor Henry J. Allen of Kansas, Governor John H. Cornwell of West Virginia, Governor Emmet D. Boyle of Nevada, Governor Lynn J. Frazier of North Dakota, Hon. Thomas Watt Gregory, Hon. Charles E. Hughes, Hon. Julian W. Mack, Governor Charles J. McCarthy of Hawaii, Governor Peter Norbeck of South Dakota, Hon. William C. Redfield, Secretary of Commerce, and Governor John G. Townsend of Delaware.

FORWARD STEPS
REPORTED TO THE AMERICAN CITY BY MUNICIPAL OFFICIALS & DEPARTMENT HEADS

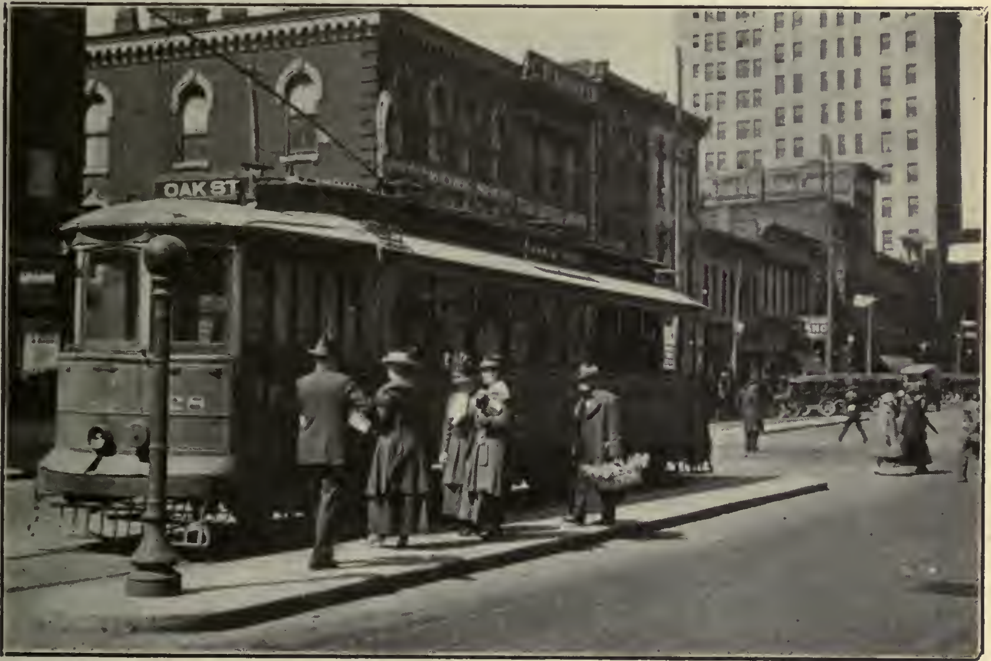
For this department the editors will welcome short articles from city, town and county officials and heads of departments, on subjects of interest and practical value to others engaged in similar work. Photographs, plans, or other illustrative material, should accompany the articles whenever available.

CITY ENGINEERS

Safety Isles for Street Railway Passengers

CHATTANOOGA, TENN.—In the fall of 1917 the wood block paving on Market Street in Chattanooga was extended northward from Ninth Street to Seventh Street, replacing an asphalt pavement laid originally in 1888 and resurfaced in 1900, the original concrete base being used as a foundation for the new paving. Market Street is 70 feet between curbs, with double car tracks in the center. Following the example of Newark, N. J., when Broad Street was being repaved with wood block a few years ago, advantage was taken of the opportunity presented by the repaving of Market Street in Chattanooga to introduce safety isles near Ninth, Eighth and Seventh Streets, where the bulk of the passengers from twelve suburban lines were received and discharged. Two of these isles were built for accommodating two cars at a time, and the other three were designed for single cars. The two-car isles are 99 feet in length and the one-car isles 55 feet, the ends in each case being semi-circular.

Each safety isle was constructed of a single slab of 1:2:3 concrete 10 inches in



ONE-CAR CONCRETE SAFETY ISLE MARKED BY RED LIGHT, CHATTANOOGA, TENN.

thickness and laid directly on the old concrete base. The width of the isles is 5 feet, their distance from the track rail 2 feet, and from the curb 20 feet. The height of the isles above the pavement is about 5½ inches, and the edges are protected by a steel corner bar. The end of each isle facing traffic is provided with a lamp post with a red globe. The cost of these safety isles, including the electric wiring, which was done by the Fire Department, was $144 for single and $234 for double car isles.

No innovation of the Street and Sewer Department has caused more favorable comment and general approval than has the installation of these safety isles. They are commended by both the Police Department and the traction company as not only a convenience but a protection to life and limb. During certain times of the day crowds are observed on all the safety isles.

ROBERT HOOKE,
City Engineer.

CITY CLERKS

Boston's Complaint Directory

Boston, Mass.—On the front page of Boston's official weekly publication, the *City Record,* there is published information which is a great convenience to citizens who wish to file complaints or make inquiries about municipal projects. This reads as follows:

> Complaints, inquiries or suggestions regarding the work of municipal departments should be made in writing to the officials directly in charge. The failure of such officials to make reply within a reasonable length of time should be brought to the attention of the Mayor. Communications should be directed as follows:
>
> To the Board of Street Commissioners, Room 401, City Hall Annex, for information relative to the laying out, relocation, widening and discontinuance of highways; the taking of real property for municipal purposes; the assessments of betterments for streets and sewers; the plotting of undeveloped areas for streets and the opening of private ways; the granting of licenses for the storage or sale of merchandise in public streets; the regulation of street traffic; the making of specific repairs in public streets; the naming of public streets; the planting and removal of trees in public ways; the issuing of licenses for the storage of gasoline, oil and other inflammable substances or explosive compounds; the use of the public ways for any permanent or temporary obstruction or projection in, under or over the same, including the location of conduits, poles and posts for telephone, telegraph, street railway or illuminating purposes, signs, marquises, bay windows, coal holes and vaults.
>
> To the Commissioner of Public Works, Room 511, City Hall Annex, for information as to the watering, cleaning, lighting and repairing of streets, the construction and care of sewers and catch-basins, the operation of the ferries, the maintenance of bridges and drawbridges and the removal of ashes and offal.
>
> To Room 604, City Hall Annex, for information relative to the supplying or metering of water and the water charges of the city.
>
> To the Health Department, Room 1107, City Hall Annex, for information relative to the inspection of milk, vinegar, meat, fish and vegetables, the issuance of permits for stables, slaughter-houses, etc., smoke nuisances, the existence of contagious diseases or public health nuisances.
>
> To the Board of Park and Recreation Commissioners, 33 Beacon Street, for information as to the care of the Common, Public Garden, Franklin Park, Franklin Field, Commonwealth Avenue, Back Bay Fens, Marine Park and the small parks and playgrounds in general thruout the city; and as to the extermination of gypsy moths and the charges made for such service. Application may be made to this department for information regarding the public baths and gymnasiums maintained by the city, and with regard to municipal indoor concerts and band concerts.
>
> To the School Committee, 26 Mason Street, for information relative to the operation of the schools of the city.
>
> To the Schoolhouse Commissioners, Room 1007, City Hall Annex, for information as to the construction and repair of school buildings.
>
> To the Board of Examiners, Room 1001, City Hall Annex, for information regarding the licensing of persons having charge or control of the work of construction, alteration, removal or tearing down of buildings.
>
> To the Commissioner of Wires, Room 905, City Hall Annex, for all information relative to the erection of poles, the building of conduits, the installation of wires and electrical apparatus. Also to the same office for permits for the installing of wires and electrical apparatus, within buildings in the city of Boston, and for the payment of fees incident to the granting of the privileges above named, and which must invariably be paid in advance.
>
> To the City Clerk, Room 31, City Hall, for all matters not covered in the foregoing list.

With this complaint and information guide and the directory of city officials, which appears in each issue, the citizens are able to get in touch promptly with the official who has jurisdiction, instead of applying to two or three departments which cannot help him, as was often the case before.

JAMES DONOVAN,
City Clerk.

CITY MANAGERS

Book-writing Machines Save Time and Money

WALTHAM, MASS.—During 1918, the first year under the commission-manager form of government in Waltham, a number of interesting changes took place in the city's method of assessing property, among them the installation of a book-writing machine which reduced the extra clerk hire by $400. The ten books containing the records were formerly copied three times in longhand. With the use of the machine, three copies are now made at the same time, and the page totals and cross totals are automatically added, even down to the individual billing amounts. The data that formerly required ten books now occupy one.

The police as assistant assessors, eliminating the former popular appointments, listed all the polls in one week instead of five and saved nearly $400 in salaries. Cases were found where a tax had not been paid for many years, and in ten days over one hundred more dogs were listed than in the entire preceding year. A few taxable automobiles were also "found" for the first time. This year the listing will be done by the officers on their regular beats, thus eliminating interference with duty as well as giving the officers a better chance to become acquainted with the persons and property in their districts.

One of the results of the new system is that bills go out four months earlier than formerly, and this last year we had to borrow exactly a half million less in anticipation of revenue, thus saving over $3,500 in interest.

A permanent appraiser was appointed without increasing the expense of the department, by reducing the salary of each assessor $600 and paying this $1,800 to a full-time expert. The salary paid to a former employe, who had died, was divided between two clerks, so that with a full-time force of three persons, the assessors act more in an advisory capacity.

TAX BOOKS, WALTHAM, MASS., SHOWING SAVING IN BULK RESULTING FROM USE OF BOOK-WRITING MACHINE

Many interesting phases came to light in the process of reorganization. For example, one small strip of land was found for which the owner asked the city $2,000, but which is assessed for only $500. Many small buildings, such as private garages, were actually assessed for less than the roof alone would cost.

—Report of C. A. Bingham, City Manager, to the Commission.

• POLICE • DEPARTMENTS

Requests Succeed Where Other Measures Often Fail

Pipestone, Minn.—When the city manager form of government was established in Pipestone, general conditions were not of the best. Alleys and back lots were very dirty, the city had no traffic ordinances, the state traffic law was not enforced, and the principle of Safety First was violated frequently. After surveying the whole situation, the manager decided that the remedy lay in education rather than in police regulation.

The city manager took office in May. It was a good time to start a general clean-up, so he went personally thru every alley in the city, making note of the conditions and checking the back yards and vacant property. This fact soon became known, and many persons started removing litter and rubbish. Ten days later he made a second trip, noting the improvements that had been made. Those who had failed to make a start were served with this postal-card notice. This secured fairly good results. The city then proceeded to clean up vacant lots, charging the cost to the property. A postal-card notice was devised, and as the manager made his daily rounds of the city and made note of unsanitary and unsafe conditions, he mailed a card stating them to the offender. This plan, almost without exception, brought results without argument, and arrest was necessary only for the maintenance of a nuisance. In consequence of the clean-up campaign the city of Pipestone has enjoyed the reputation of being the best-kept and cleanest municipality in the state.

CITY OF PIPESTONE

For a Safe, Clean, and Attractive City

Your Assistance Solicited

I check the following exceptions against property owned or occupied by you: ....

....

....

....

This is not an order, but a reminder of a matter possibly overlooked, and a prompt compliance will be appreciated.

F. E. Cogswell, Gen'l Supt.

(Postal Card)

At about the same time as the clean-up campaign, we began to regulate automobile traffic by education instead of by arrest. At that time, cars were often operated without numbers, without lights and, in fact, with little regard to law. The police force stopped the cars, called the attention of the drivers to the law, explained what was necessary and what the Department would expect. This was kept up for six months with continued improvements. A few arrests were necessary as a reminder that the Department was ready to make good in what it started out to do, if coöperation were not forthcoming.

The Council in the meantime passed a traffic ordinance regulating the use of motor cars upon the street, parking, etc., and embodying other provisions of the state law. The Police Department thereupon put traffic officers at the principal intersections on busy afternoons and evenings, giving drivers all the assistance possible in becoming familiar with the new regulations. Because we had so many out-of-town cars in the city, it took us some time to get everyone posted on the new regulations, but by the use of tact we were able to achieve results without creating any hard feeling with the country traders who made use of the city streets.

Car No. .... Date...............

You are violating traffic ordinance No. 69 of the city of Pipestone, viz.: ....

....

....

A continued violation will be followed by arrest. We ask you to do your share in making the streets safe for pedestrians as well as for automobiles. Please look at this notice in that light.

F. E. Cogswell,
Chief of Police.

(Red Card)

Winter intervened, and with it a falling off of traffic. The following spring, we put a system of red traffic warning cards into effect and started a vigorous enforcement of both the state law and the local ordinances. First offenders received the red card, which was made in duplicate, the police keeping the carbon. It served as a notice to the driver and a record for the police, and made it possible to apprehend the second offender. The result was that we had practically no trouble whatever during the last year with the exception of a few tail-light cases and some difficulty in persuading drivers of cars from Iowa as to the wisdom of not turning around in the center of the block. The cards did their work.

At the same time that the red cards were being used for the automobilists, we instituted a green card system for pedestrians. Cross-walk lines were indicated on the streets in heavy white paint, and the public was directed to follow these lines in crossing the streets. Violators were handed a green card asking their support in the Safety First campaign. There were no arguments, and the cards again did their work, for they constituted a source of amusement to bystanders, who would watch until someone was handed a card by an officer and would then poke fun at the offender. The result was that we gave out very few cards and soon found that the need for them had passed.

SAFETY FIRST

Eighty per cent of the street accidents to pedestrians are due to "cutting" of "corners" at street intersections. The object of handing you this card is to ask your help in preventing accidents and injury, possibly death.

Please cross the street on the established sidewalk line where you have all your legal rights.

F. E. COGSWELL,
Chief of Police.

(Green Card)

By these educational methods, we accomplished more than could have been accomplished, in our opinion, by numerous arrests, altho when arrests were necessary we made no distinction. One day we arrested the Municipal Judge himself, and immediately after that arrested the Judge of Probate. This had a remarkable effect, for the news spread all thru the county, with the result that it was considered good business for the ordinary citizen to obey the Safety First suggestion and "Be Careful."

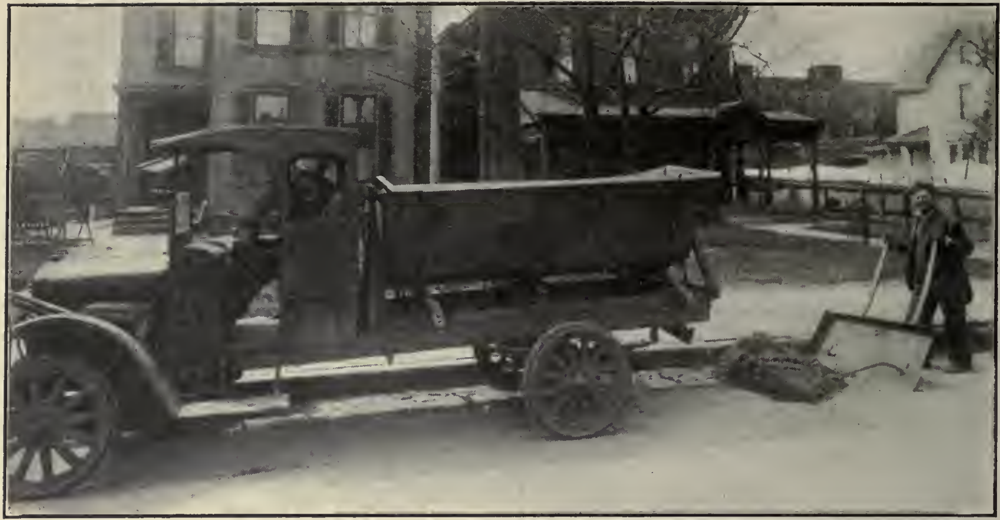
F. E. COGSWELL,
General Superintendent, City of Pipestone.

CITY PLANNING COMMISSIONS

Explaining What City Planning Means

ST. PAUL, MINN.—The St. Paul City Planning Board held a city planning exhibition in the Public Library from May 5 to 11. A large number of plans from American cities were shown, together with a most exhaustive collection of local improvement schemes and plans and models for war memorials. The exhibition was organized by the writer and was attended by over 2,000 visitors. Dr. John Nolen, city planner, of Cambridge, Mass., who had come to St. Paul to report on a city plan, addressed a large gathering at the exhibition, under the chairmanship of Dr. Carol Aronovici.

CITY PLANNING EXHIBITION IN PUBLIC LIBRARY, ST. PAUL, MINN.



MOTOR TRUCK AND SCRAPER DOES WORK OF FIFTEEN MEN IN CLEANING GUTTERS, INDIANAPOLIS, IND.

The activities of the week were opened by a "City Planning Sunday," when the churches and chapels drew attention to the work and the local universities and high schools visited the exhibit and listened to lectures. Several thousand copies of a pamphlet on "The Meaning of City Planning" were distributed. This contains a brief statement of the meaning of city planning, its inception and development, the difference between city planning by autocratic governments and that which functions as a popular movement in a democracy. It also pointed out the penalties of delay, the vast sums of public money which must be spent in widening streets, clearing away slums, cutting diagonal thorofares and providing small parks in congested districts, all of which can be obviated by proper foresight and planning. It pointed out that city planning is not a veneer, that it is intimately concerned with how the people live, how they work and how they spend their leisure, and it brought home to the people, we believe, a real conception of the fundamental character of the city planning movement.

From the comments which we have received we believe that the prospects of a comprehensive scheme of city planning in the Minnesota capital are very bright.

GUY WILFRID HAYLER,
Member of the City Planning Board, in Charge of Exhibit.

HIGHWAY DEPARTMENTS

Motor Truck Helps to Clean Gutters

Indianapolis, Ind. — The photograph shown above illustrates a new and advantageous method of gathering up accumulations of dirt in the gutters of Indianapolis. The pan, which is patterned after the Doan scraper, was made from scrap material by the Department of Street Cleaning at an outlay of about $5. The 2-ton Maxwell truck working three hours a day can pile up enough of this dirt from the gutters to keep the truck and five teams busy hauling for the remainder of the day. Cleaning the gutters in the spring by this method after the winter's accumulation of dirt and filth makes it possible to start the regular spring cleaning much earlier and therefore have the streets in better condition.

The scraper takes the place of about fifteen men. The dirt in the gutters is very frequently too hard to loosen with the pan by hand, and the work is done much faster and more easily by attaching the scraper to the motor truck. One panner and one broomer follow up the truck in its round and make the piles a little more compact.

THOMAS WALTERS,
Superintendent of Street Cleaning.

Quick Concrete Repair Jobs

New Orleans, La.—One of the most difficult problems in street paving is how to make the small repairs in the different types of paving and provide an adequate foundation similar to that of the original pavement. In order to overcome this difficulty, the municipal repair plant in New Orleans has devised what we call our concrete service outfit, which consists of a 4-ton truck with a platform body on which is built, behind the driver's seat, a place for tools, three small bins for aggregate (having a total capacity of one cubic yard), a space for carrying cement in sacks, and, on the rear end, a 3-foot concrete mixer, as shown in the photograph.

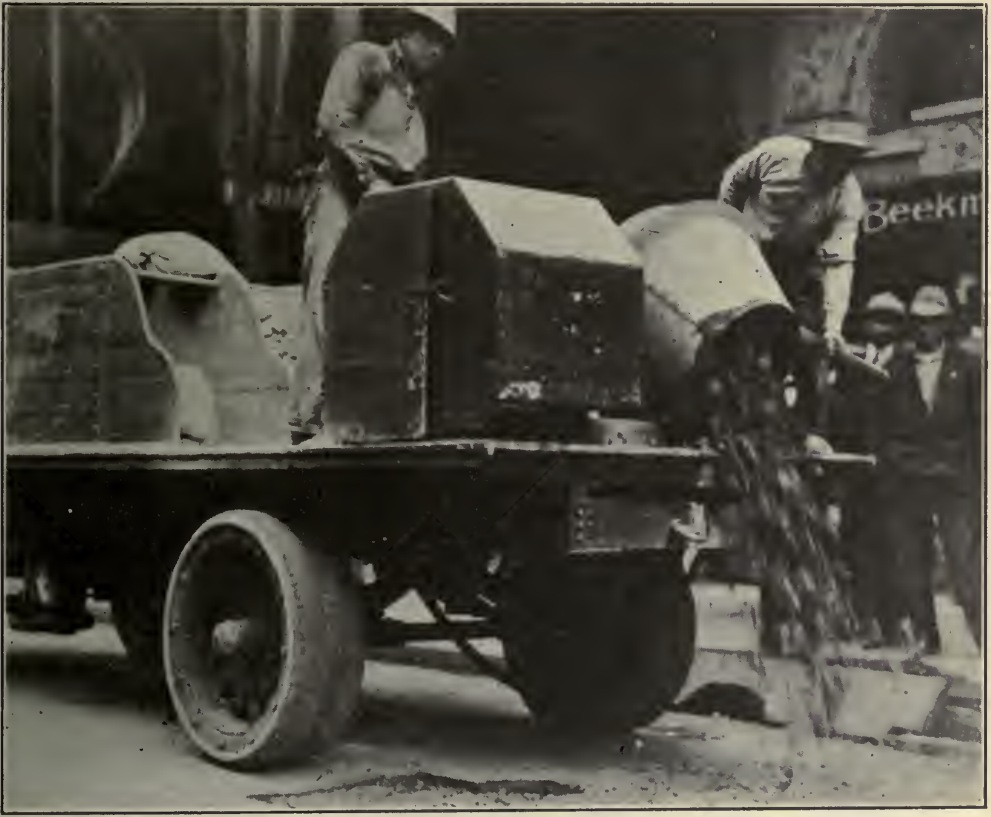
The crew is usually composed of five men, who are able to take care of the cutting out and placing of between 25 and 35 square yards of concrete per day on patch work distributed over a wide area; on straight work, such as concreting trenches, they can place about 12 square yards per hour. The outfit cost about $3,000 and has been in successful operation for five years. It has been the means of making it possible for this department to distribute repair jobs widely thruout the city and to complete them expeditiously and economically.

JAY W. TWINING,
Engineer in Charge, Municipal Repair Plant.

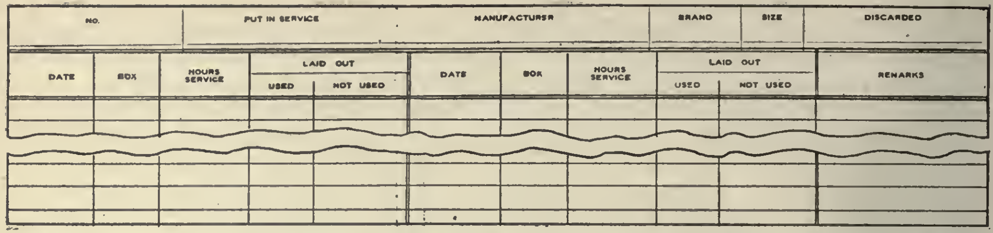
FIRE DEPARTMENTS

Indexing Fire Hose

Columbus, Ohio.—One of the difficult problems in fire department service is to determine the comparative merits of different types of fire hose as regards wear and life under service conditions. In order to know exactly how long each piece of hose has been in use and what service it has



MOTORIZED CONCRETE MIXER OUTFIT USED BY MUNICIPAL REPAIR PLANT, NEW ORLEANS, LA.



NO.	PUT IN SERVICE	MANUFACTURER	BRAND	SIZE	DISCARDED

DATE	BOX	HOURS SERVICE	LAID OUT		DATE	BOX	HOURS SERVICE	LAID OUT		REMARKS
			USED	NOT USED				USED	NOT USED	

CARD USED BY FIRE DIVISION, COLUMBUS, OHIO, TO RECORD LENGTH OF SERVICE AND WEARING QUALITIES OF HOSE

rendered, the Fire Division in Columbus has maintained for some time a system whereby the record of each piece of hose is kept on an 8½ x 11-inch card with the heading shown above. Prior to the use of this card, we knew when a hose was first put in service and when it was discarded, but we were unable to ascertain to what wear and tear the hose had been subjected.

Under the card system, the officer in charge makes a record of every time the hose is laid out and of whether or not water is pumped thru it. When new hose is placed in service, each length is given a number. When hose is placed in the wagon, the number of each length is noted by the officer in charge of the station. On arriving at a fire he lays out a certain number of lengths of hose. Upon his return to headquarters he refers to his list, and notes the numbers of the lengths that were used. The proper record of service is then made on the card.

Hose placed in service in the outlying districts is not subjected to as great wear and tear as hose used in the congested districts. The latter is therefore discarded sooner. The card record enables us to make comparison as to the actual service rendered. We have been using this method for the last two years and find it very satisfactory.

S. F. RODGERS,
Secretary, Fire Division.

Preventing Roof Fires Caused by Burning Chimneys

Elgin, Ill.—The continued high price of anthracite coal in Elgin and vicinity was the cause of a very great increase in the use of soft coal last winter. Some grades of soft coal form a tarry crust in the inside of the chimney, which ignites very quickly when fires are rekindled in heating plants. Sometimes flames rush up the chimney, and sparks from the pitch ignited in the chimney are blown under shingles that are warped or curled slightly, and there find most excellent fuel in the fine inflammable dust. In this manner fires are readily started, and soon get to the dry attics.

Because of conditions of this nature, I had short notices printed in the daily papers asking house owners and tenants to burn out their chimneys while the roofs were too wet to burn. The idea was to kindle a fire of papers or wood so that it would create a flame which would reach up into the chimney and burn it out.

After these short notices were published in the daily papers, the number of small roof fires caused by sparks from chimneys decreased considerably, and it is believed that this suggestion resulted in the prevention of a considerable fire loss to the city.

WILLIAM HAIBLE,
Fire Marshal.

Why Not License Cats?

It would seem that the same general reasons for the licensing and restricting of dogs should be applied to cats. As pets they have far less appeal than the dog. They are a source of danger in the spread of disease, even of rabies; they destroy useful birds, disturb sleep, consume food needed for human beings, and are frequently a nuisance to a neighborhood. The possibility of their spreading contagious disease was well illustrated in Buffalo, N. Y., when the Board of Health took cultures from the eyes of a suspicious-looking cat and found diphtheria germs. People who wish to harbor cats should do so under supervision that will prevent them from becoming a danger or a nuisance to the community.

—*Hartford Health Bulletin.*

Drawing a Picture of Municipal Business

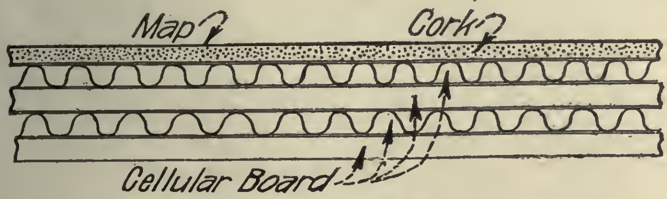
Graphic Methods for City Officials

By Gardner T. Swarts, Jr., C. E.

IT is becoming more common every day for business firms to use the graphic method of setting facts before their executives in tangible form. While it is true that city engineers' departments have for years utilized graphs, and health departments in the most progressive municipalities now use pins and charts in tracing the course of communicable diseases, relatively few cities have employed these methods extensively in other departments. There is no reason why the superintendents of streets, schools, buildings, lights, waterworks, parks, fire and police should not also use these convenient and up-to-date methods.

It is supposed by some who have not kept in touch with the rapid strides made in the science of graphics within recent years that the preparation of charts and maps for this purpose involves a great deal of time and labor, as well as expert draughtsmanship. This is a mistake, however, for materials have been prepared which eliminate most of the labor and make the preparation and up-keep of graphic charts and maps not a matter of drudgery but of pleasure. Once started, only a few seconds each day are required for the proper posting of the facts. Graphic charts not only help the executive himself, but they are also a tangible method of showing to outsiders the results that he has accomplished. Moreover, they single out the important things so plainly to his office assistants that they can carry out much of the detail which he himself would otherwise have to take up.

Methods of showing facts graphically divide themselves into two classes, geographical and chronological.



CROSS-SECTION OF MAP MOUNT FOR USE WITH PINS

Notice that the alternate layers of cellular board are laid cross-wise so as to give stiffness to the mount

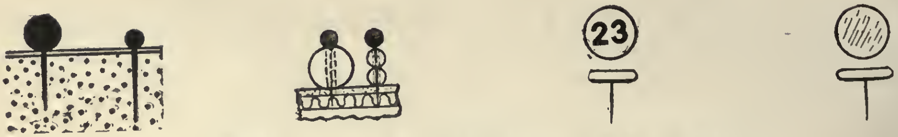
Types of Maps in Use

It usually happens that there is some good map of the city available, one which can be either purchased locally or obtained thru the courtesy of the city engineer's office. Of course, very plain maps, without colors and showing only the outlines and the names of the streets, are best. The scale should be about 600 feet to the inch, or larger, but maps as small as 1,200 feet to the inch can be used in some cases. If the data on the map are shown in the street, as, for instance, water-main valves, a map should be selected with the names of the streets lettered on the map at one side of the street. On the other hand, a fire department would prefer a map with the names of the streets lettered in the streets themselves, so that pins representing the location of fires could be inserted alongside the street without obscuring the name of the street from view.

County officials can use the same devices to good advantage. Maps of counties are obtainable from the county surveyor and in many cases from the United States Post Office Department. These maps are to the scale of one mile to the inch and show all roads, railroads, rivers and practically every building. They are in plain dark lines on a white ground and hence are excellent for pin work. County maps can also be made up from the United States topographic sheets pieced together.

Map-Marking Devices

For permanent maps for illustrating work accomplished, gummed paper symbols are available in stars, circles, squares and other shapes, also in colors. They are not convenient, however, when the data have to be changed frequently.



TYPES OF PINS FOR RECORDING DATA ON MAPS

Needle-pointed glass-head pins

Beads and pins

Numbered glass pin

Glass pin to write on

At left—Using the eraser on the end of a pencil to push a glass pin into the map. This saves one's fingers and the map. At right—A colored celluloid signal flag

On maps that must be kept up-to-date and on which the data are constantly being changed, various types of map-marking devices are now available. The old-style cloth-head tack, which defaced the map with a jagged hole and from which the color soon faded, has now been superseded almost entirely by a pin with a sharp steel needle point and a solid-colored glass head. This pin is made in sixteen distinct colors, as well as several sizes and styles. Small pins, about 1/16 of an inch in diameter, fit in very nicely on small-sized maps, but the size most commonly used is that with a spherical head 3/16 of an inch in size. In addition to this, there are glass pins with flat, rough heads upon which one can write, also numbered pins of the same material. For very large maps, celluloid pins are used, having a rough surface which can be written on.

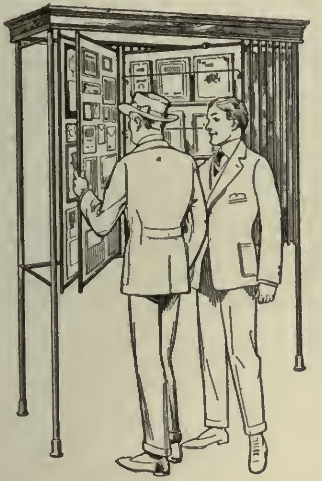
Of course a pin will indicate only one fact at one point. Where it is desired to show more than one fact, a bead and a pin can be used, the color of the bead representing one type of fact and the color of the pin the other. For instance, a small red glass head pin stuck thru a large yellow bead might indicate that there was a leak in a water-main at that point, and that the leak has been stopped by turning off the water. As soon as the leak has been repaired, possibly in some temporary way, the yellow bead would be replaced by a blue one, indicating that the repair was of a temporary nature. Instead of the beads, small rings of colored celluloid can be used. These are called map rings and can be slipped over the heads of the colored glass head pins.

Map Mounting

Where pins are to be used, it is very desirable to have the map mounted on some soft substance. While soft wood is often acceptable, and even some of the various wall-boards in cases where pins are not frequently used, a special type of mount has been devised which is of very great value. It is made up of layers of cellular cardboard faced with a thin layer of cork composition. This makes a mounting board about ⅝ of an inch thick, which is soft enough to make it easy to insert and remove pins but which holds them tenaciously so that there is no danger of their falling loose when the conscientious janitor removes the dust from the map. In this form of mount, the pin may be inserted in the same spot again and again without danger of its wearing a large hole. It is also customary to use a transparent map varnish over the map face so that it will not absorb dampness and dirt and can be readily washed clean with a damp cloth.

Special Chart Forms

For charting data by days, weeks, months and years, charting forms are available which entirely obviate the necessity of ruling sheets specially for the purpose. These forms come already divided for the work. For instance, there are papers to use for weekly plotting that have exactly fifty-two spaces on the engraving, one for each week.



SWINGING-LEAF DISPLAY FIXTURE TO HOLD A NUMBER OF MAPS AND CHARTS FOR READY REFERENCE

Similar papers are provided which contain thirty-six and sixty spaces, respectively, for plotting data by months for three and five years. These papers are specially printed on a paper stock which is transparent enough to be blueprinted. On some of the papers the spacing is arranged so that scales can be inserted on the typewriter without continually adjusting the lines.

Anyone who has struggled to plot data by days, weeks, months and years on a decimally divided paper will appreciate what an advantage these special rulings are. In decimally divided sheets, such as millimeter paper and paper divided into eighths and sixteenths of an inch, the heavy lines on the ruling never fall at the right places, and the result is that the chart is confusing both to make and to read.

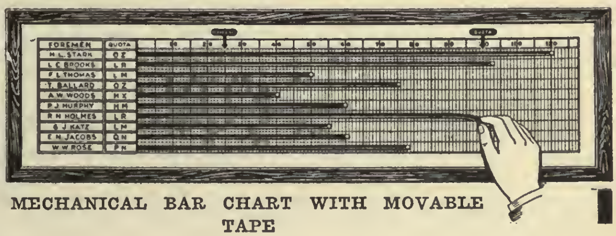
It is said that during his stay in France, General Pershing always carried with him his book of graphics. In the same way the city official should always have at hand a loose-leaf book containing the more important charts, which should be kept up regularly so as to aid in making decisions quickly and in answering questions put to him by taxpayers of the community. These papers are letter-sheet size and can be filed with other typewritten matter or bound up with a typewritten report. A few graphic charts properly made and inserted as illustrations of the text help wonderfully to make an otherwise "bone dry" report interesting and easily understood.

There are also cards available with these same rulings, fitting the standard 4 x 6 files. Cards are useful where there is a vast number of items to be cared for.

Mechanical Graphs

Lately there have been made available what are called "mechanical graphs." These are devices for mechanically plotting data and are so arranged that it is not necessary for a draughtsman to do the work. They require only a few seconds each day to keep them up-to-date. The executive himself can usually attend to this and thus be able to have the benefit of intimate contact with a picture of the progress of his work.

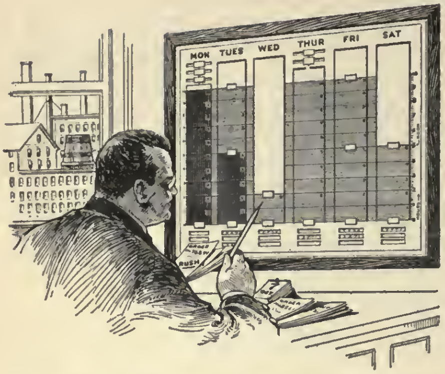
One of these devices, called a mechanical bar chart, consists of a chart with movable bars. The bars are made up of tapes on small spring rollers. In the free end of the tape there is a short needle point. The tape is pulled out to the desired place, and the needle point is pressed into the backboard.



MECHANICAL BAR CHART WITH MOVABLE TAPE

In a more complicated form of mechanical bar chart, three or more overlapping colored tapes are used. By using this device, it is possible to set up quickly complex data, showing percentages or quantities of work completed or material on hand.

Another device, called a remindograph, is particularly useful in following up the



THE COMPOSITE MECHANICAL BAR CHART

progress of work. The board is ruled in thirty-one numbered spaces, one for each day of the month. At the left-hand side are name plates in which cards can be inserted. The job number and the description are entered on the card, and colored map pins are inserted underneath the days at which the various stages of that job are to be completed. For instance, if a blue pin is inserted under the figure 2 and opposite job No. 46, it will indicate that the material for that piece of work should be on hand by the second of the month. Similarly, a green pin on the 12th would indicate that excavation should begin on that date, and so on. There is a movable slider which is advanced one day's space across the board each morning. This consists of a rod which runs in tracks at both the upper and the lower ends. This rod, therefore, cannot be lifted free from the board. As a consequence, when it is advanced, all the pins for that day must be moved from the space next to the right of the slider. In this way it automatically becomes impossible to overlook any of the pins, because they all have to be removed before the slider can be advanced. For work which is behind, the pin is moved ahead to a postponed completion date for that particular part of the job, and, correspondingly, other pins on the same job may have to be advanced.

With this device at hand, not even the smallest step in the progress of the work need be overlooked. Moreover, by glancing at the chart, the executive can tell exactly how any job stands and when its various parts will be completed. The grouping of too many pins of the same color under one date will indicate that too much of that particular type of work has been laid out for that day, and will warn the superintendent in time, so that he will not overload the capacity of his apparatus or gangs.

Application of These Devices to the Work of Various City Departments

Water-works superintendents can use to advantage a map showing the location of valves, hydrants and meters. On this can be indicated readily any changes which are made and also the occurrence of leaks requiring immediate and future attention. On new work, colored cords and pins can be used to show progress of excavation, pipe-laying, and completed sections. The superintendent can also use the mechanical bar chart to keep an inventory of materials on hand at the city yards and to show the percentage of completion on any job. For this reason, the mechanical bar chart is ruled into one hundred spaces. Charts can be drawn in colored ink on engraved paper, showing daily consumption, also expenses.

Similarly, fire departments can use maps to show the location and character of each fire during the past year or a series of years, sticking in a new pin each time a fire occurs. By means of numbered pins the location of the various pieces of apparatus can be shown, also the location of hydrants and the routes of fire apparatus. In the same way, charts can be kept of the number of fires and of expenses incurred. Beads can be used to make a relief map of the buildings in the close fire district, each bead representing a story of the building, the color showing the type of construction.

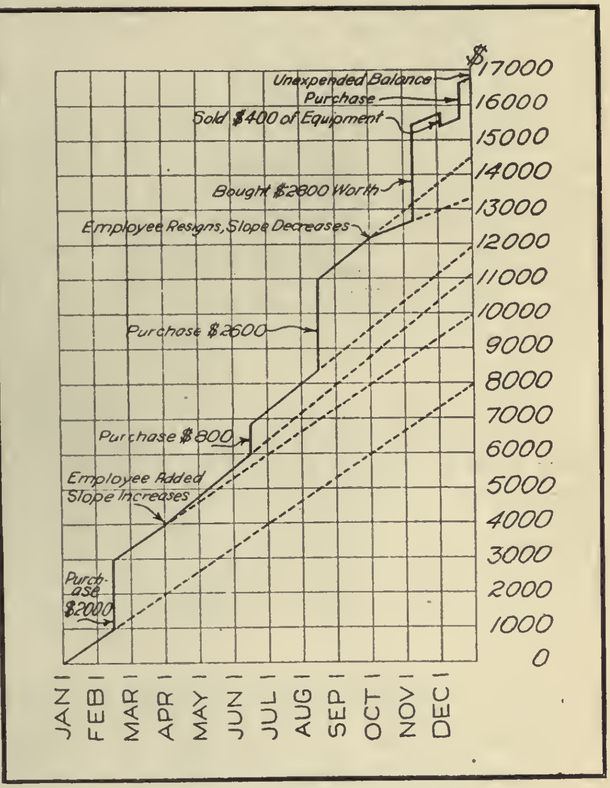
The Park Commissioner can use a map

USING THE REMINDOGRAPH

to show the location of various kinds of shrubbery in the parks, using a different colored pin to indicate each type of tree or bush. Several beads on a tall pin can also be used to indicate four facts about each tree or bush: the color of the top bead, for instance, represents the height, the color of the second bead the age, the third bead the kind of tree, and a fourth bead as to whether it has been transplanted or was grown on the spot.

The School Superintendent uses maps showing the homes of his pupils as a guide to the location of new school buildings, and the proper apportionment of these, also the location of special schools for backward children and for special work.

Superintendents of Health have used these devices now for many years, and literature is procurable explaining the use of them in city and state departments.*



AN APPROPRIATION CHART

Appropriation Chart

A unique chart which can be used to advantage by almost any department may be called an appropriation chart.† Nearly every department head is puzzled to know how he stands at any one time with regard to his appropriation, when it is subject to certain fixed expenses for salaries plus a fluctuating expense for repairs and equipment. This chart makes it easy for him to keep constantly before him the status of his appropriation.

Suppose, in the chart shown, the appropriation was $17,000. Suppose also that there are running expenses for salary and office costs amounting to $8,000 per year. A line is then drawn from the point marked 0 on January 1 to the $8,000 point on December 31. Suppose, for example, in the middle of February, a $2,000 purchase is made. In this case, the line is drawn vertically $2,000 high at February 15, and from the top of this another sloping line is drawn parallel to the first. This indicates that $10,000 of the appropriation has been used, and if office expenses and salaries remain the same, there will be but $7,000 available at the end of the year.

It so happens, however, that on April 1 a new employe is added. This employe receives $133 per month, or approximately $1,200 for the remaining nine months. A point on the December 31 line $1,200 above the $10,000 line is located, and a new line is drawn with a steeper slope, starting at April 1 and involving all the office expenses and salaries, including the new employe's salary. About June 15, $800 more of material is purchased and another parallel line is drawn, indicating that approximately $12,000 has been spent and only $5,000 still remains to be utilized. Another purchase of $2,600 is made about August 15, but on October 1 an employe who receives $40 per month resigns, so that the slope of the running expense line decreases. Further debts amounting to $2,800 are contracted during early November. During the first week of December, $400 worth of old equipment is sold, which is deducted. This scheme can be carried out indefinitely so as to show the actual condition of any appropriation at any given time.

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* "Charts and Maps as Used by Health Officers," Gardner T. Swarts, Jr., C. E., *American Journal of Public Health*, Vol. VIII, Sept., p. 674.

† This type of chart was first described by F. J. Shlink, Associate Physicist, U. S. Bureau of Standards. See *Industrial Management*, May, 1918.

The use of a simple diagram like this, involving only a minute's time whenever important purchases or changes in personnel are made, will save considerable embarrassment and will tell more at a glance than a set of books would.

Photographing Charts

For permanent record, it is convenient to blue-print charts, but pin maps and charts which are not on transparent paper have to be photographed each month or each year. These photographs are then filed away for reference. A great deal of care should be used in planning maps or charts to be photographed, in order to see that the proper colors are used. For instance, blue reproduces as white, while red and yellow photograph black.

In large cities and in some city departments, the photostat machine is used for this purpose. In this machine, the photograph is made directly on sensitized paper, and not on a glass negative from which a print has to be made later. This process is considerably cheaper than photographing, and almost any document or map can be readily copied in this way.

Pin maps which are to be photographed should have the pins as close to the map as possible to avoid shadows and the danger of showing the pin out of position in the photograph. This is one of the reasons why the very soft mount mentioned in the early part of this article is recommended, as this type of mount makes it easy to push the pin away in up to its head.

Partial Bibliography of Graphic Methods

1. Suggested Methods for Inaugurating a Public Safety Campaign. — National Safety Council, Chicago, Ill. 25 cents.
   Accident map, showing number of accidents at dangerous corners.
2. Graphic Methods for Presenting Facts.—Willard C. Brinton. Book of 380 pages, 7 x 10 inches. $5.00.
   This is the only elaborate treatise on graphics available. It contains 257 illustrations of charts and maps. Practically every type is shown. Chapters XI and XII deal with maps and map pins.
3. Graphic Charts for the Business Man.—Stephen Gilman. Pamphlet of 62 pages, 6 x 9 inches. 60 cents.
   A very useful little pamphlet, taking up the elements of charting and showing over 50 practical illustrations of curves and charts in use. No information on map work in this pamphlet.
4. Charts and Maps as Used by Health Officers.—Gardner T. Swarts, Jr. *American Journal of Public Health*, September, 1918, p. 674. Also issued as a reprint, 25 cents.
   A thoro exposition of the possibilities and methods of applying graphics to public health work.
5. Millions for Paving Controlled by a Handful of Pins.—William H. Connell. *Engineering Record*, December 11, 1915, p. 714.
   Explains an ingenious and convenient method of a combined map and visible card record.
6. Seattle Utilities Pay City for Subsurface Maps.—A. L. Valentine. *Engineering Record*, December 25, 1915, p. 792.
   Besides explaining how this map work, costing $125,000, was paid for, Mr. Valentine shows two illustrations of sections of the map. Pins could have been used to good advantage to keep changes up to date in these maps.
7. Some Maintenance Expenses of a Small City.—Charles J. Renner. THE AMERICAN CITY, May, 1914, p. 452.
   This shows how to chart curves of city costs by months. Four actual curves are shown.
8. School Statistics and Publicity.—Carter Alexander. Book of 331 pages, 79 figures, 5 x 7½ inches.
   A very comprehensive treatment of the possibilities of graphics as an aid to the school teacher and the superintendent. Shows good and bad methods and particularly treats of the advantages of presenting reports in graphic form.
9. Vital Statistics: An Introduction to the Science of Demography.—Prof. George Chandler Whipple. Book, soft leather covers; 517 pages, 4¼ x 7 inches, 148 tables, 63 figures.
   A handbook for health officers and health statisticians, full of examples of graphic charts and explanations of how these are used.

The Gravity Water-Supplies of Le Roy and Newark, N. Y.

By James P. Wells
Consulting Engineer, Rochester, N. Y.

IN 1915, Le Roy, N. Y., a municipality with a population of 4,000 people, about 25 miles southwest of Rochester, installed a gravity water-supply system which has proved remarkably successful. Newark, N. Y., about 30 miles east of Rochester, has recently voted, by a majority of 3 to 1, an appropriation of $280,000 for a similar supply. This appropriation is noteworthy because it is made at a time when some municipalities are hesitating to push new construction work, in hope that prices will go down. The new supply of water is to be obtained by gravity by storing surface water in a large reservoir located on ordinary farm land and fed by streams draining land of a similar nature.

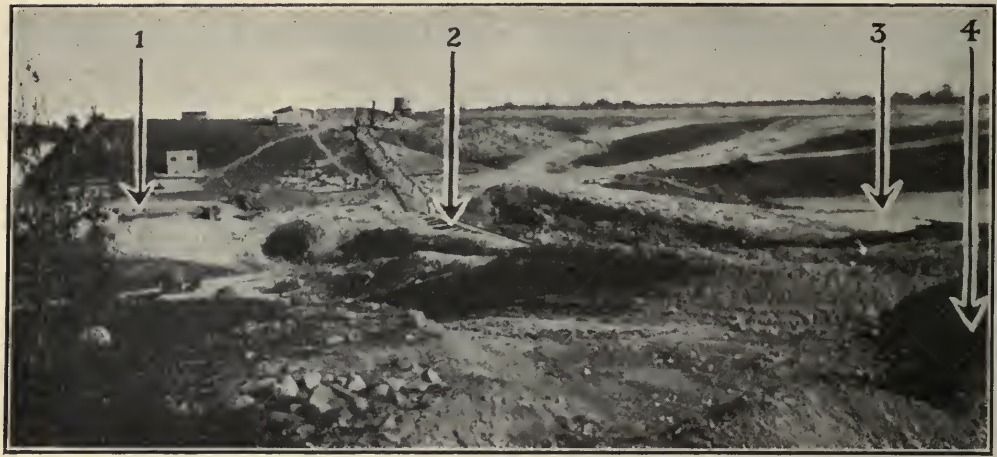
Strange as it may seem, while there are a great many instances all over the United States of cities that have obtained adequate supplies of soft water by the construction of storage reservoirs, there are, nevertheless, many municipalities that have sought to supplement their inadequate supplies of hard water by pumping either from a lake or from wells. The writer knows of a municipality that has spent $350,000 to pump against a head of 600 feet, altho an equally good supply could have been obtained by gravity at slightly less expense. Once constructed, the gravity system removes from the minds of the citizens and the municipal officials practically all the worries caused by the emergencies of pumping system operation, such as rising prices of coal and shortage of supply, as well as the troubles which are experienced with most well systems.

The Le Roy Reservoir

The construction of the gravity system at Le Roy, N. Y., and the proposed construction of a similar system for Newark, N. Y., well illustrate the advantages of the gravity system.

The accompanying photograph shows the site of the lower dam at Le Roy from the up-stream side before the dam was constructed. The heavy line represents the crest of the dam. The reservoir basin was ordinary farm land, with a drainage area of about 1.7 square miles, also of ordinary farm land, with fourteen or fifteen dwellings having farmhouse privies on the watershed. The stream which flows into the reservoir dries up during the summer, and sometimes for three or four months during the year no water flows into the reservoir. It is designed with a sufficient capacity to furnish three times Le Roy's daily consumption for an entire year even if no water whatsoever enters the reservoir for six

SITE OF LE ROY DAM BEFORE CONSTRUCTION BEGAN
Heavy Black Line Indicates Location of Crest of Dam



THE LE ROY, N. Y., DAM UNDER CONSTRUCTION

1. Site of filter plant. 2. Core wall of dam. 3. Lake beginning to form. 4. Excavation from foundation for spillway

months. Since it was constructed it has been necessary to draw down the reservoir only 2½ feet, and it is possible to draw as much as 14 feet to the level of the intake. This illustrates the value of careful study in selecting the location and determining the size of a storage reservoir, as during the last seven years meteorological reports show that the rainfall has been below the average.

The Le Roy Filtration Plant

Directly in front of the dam of the Le Roy reservoir is a 1,000,000-gallon rapid sand filtration plant. Because of the large storage reservoir, which permits considerable settling of the water before it reaches the filtration plant, it is necessary to use but a very small quantity of alum.

The entire expense of operating the filter plant and taking care of the reservoir during the last fiscal year was about $1,390. Of this amount, $470 was for the alum, $212 for gasoline to operate the engine furnishing the water to wash the filters and also to operate the air blowers, $48 for coal to heat the plant, and $720 for the man who operates the plant. The filter plant is located at the reservoir, and the man in charge of it is allowed to work some of the extra land owned by the city, in order to increase his salary. It takes about an hour and a half daily to care for the plant, and the rest of the time the man is permitted to spend outside. Alum prices in the past year have been abnormally high on account of the war—about $75 a ton; approximately seven tons were used during the year.

The water consumption of Le Roy is about 300,000 gallons daily. The filter plant is not in any sense an elaborate proposition. It is an inexpensive plant used solely as a precautionary measure to remove contamination and the turbidity which results from heavy rains or from the winds stirring up the surface of the reservoir.

Chlorination of Supplies

Sterilization by chlorine is used at Le Roy, and repeated bacteriological examination of the water shows that B. coli is very seldom present, as the period of storage in the large reservoir renders the water practically "epidemiologically sterile" before reaching the filter plant. Newark, N. Y., already owns a chlorinator which is being used in connection with the present pumping plant, and chlorine will be used in the new supply at least during certain parts of the year and whenever the least trace of contamination is found.

When a chlorinator is used in connection with a gravity supply, it is of considerable importance to have an automatic apparatus controlled by a Venturi tube so that the amount of chlorine varies in proportion to the volume of water, otherwise there is apt to be a pronounced taste of chlorine at night or on Sundays, when very little water is used. This, however, may be taken care of by providing a full-time operator who observes and records the amount of chlorine

PRICES ON GRAVITY WATER SUPPLY SYSTEM, NEWARK, N. Y., JUNE 2, 1919

DIVISION 1—EARTHEN DAM AND DYKES

	Quantities	Unit Measurement	Lupfer & Remick	Brown & Loew & Law Bros.	Foundation Co.	E. W. Foley Co.
Clearing and grubbing (lump sum)	......	......	......	......	......	......
Earth excavation core wall and pipe trenches	2,300	Cu. yds.	$ 1.40	$ 1.00	$ 1.25	$ 1.50
Earth embankment in dam and dikes	28,600	cu. yds.	1.00	.80	.55	.95
Riprap	4,200	sq. yds.	1.35	1.00	1.40	1.50
Cobble cutter	100	sq. yds.	1.20	1.50	1.75	1.50
Class "A" concrete	200	cu. yds.	12.90	14.00	17.65	14.00
Class "B" concrete	475	cu. yds.	14.50	12.00	20.50	16.00
Class "C" concrete	2,450	cu. yds.	7.00	11.00	11.50	8.50
Laying 14″ cast-iron pipe	300	lin. ft.	.60	.80	.60	1.50
Valves 14″ hauling and setting in place	4	each	6.00	25.00	13.00	10.00
14″ flanged special castings hauling and setting in place	6	each	12.00	25.00	13.00	15.00
Setting valve stem and wheel	1	each	12.00	10.00	13.00	25.00
Miscellaneous, steel ladder, reinforcing steel, etc.	1,200	lbs.	.20	.10	.10	.10
10″ vitrified tile pipe furnished in place	900	lin. ft.	1.20	2.50	.60	1.50
4″ vitrified tile pipe furnished in place	50	lin. ft.	.90	.80	.20	1.00
Wooden rack furnished in place	1	each	25.00	15.00	18.50	40.00
Hauling and setting 14″ fish trap	1	each	12.00	20.00	13.50	20.00
Totals			$66,917.50	$68,425.00	$69,067.00	$70,880.00

DIVISION 2—A ONE-MILLION GALLON MECHANICAL FILTRATION PLANT

Norwood Engineering Co.	$24,960
Roberts Filter Mfg. Co.	31,613
Hydro Construction Co.	31,750
Pittsburgh Filter Co.	32,500
Foundation Co.	37,500

DIVISION 3—LAYING CAST IRON PIPE

(Bell and Spigot Pipe)

	Quantities	Unit of Measurement	J. F. Leary Const. Co.	Foundation Co.	Bruno Pizzementi	Tifft. Const. Co.
Hauling and laying 14″ cast-iron pipe	38,350	lin. ft.	$ .70	$ .88	$ .89	$1.10
Hauling and laying 6″ cast-iron pipe	120	lin. ft.	.50	.80	.60	.90
Hauling and setting 14″ valves	6	each	20.00	13.00	25.00	15.00
Hauling and setting 6″ valves	5	each	15.00	13.00	10.00	10.00
Hauling and setting 1″ air valves	5	each	5.00	2.65	5.00	5.00
Creek crossing	400	feet	10.00	10.70	25.00	10.00
Total or Gross Sum of Bid			$31,125.00	$38,280.25	$44,428.50	$46,458.00

(Universal Pipe) (Alternate)

	Quantities	Unit of Measurement	J. F. Leary Const. Co.	Foundation Co.	Bruno Pizzementi	Tifft. Const. Co.
Hauling and laying 14″ cast-iron pipe	38,350	lin. ft.	$ .70	$ .52	$ .70	$ .95
Hauling and laying 6″ cast-iron pipe	120	lin. ft.	.50	.70	.50	.80
Hauling and setting 14″ valves	6	each	20.00	13.00	25.00	15.00
Hauling and setting 6″ valves	5	each	15.00	13.00	10.00	10.00
Hauling and setting 1″ air valves	5	each	5.00	3.65	5.00	5.00
Creek crossing	400	lin. ft.	10.00	10.70	25.00	10.00
Total or Gross Sum of Bid			$31,125.00	$24,474.25	$37,130.00	$40,693.50

DIVISION 4—FURNISHING CAST IRON PIPE

(Hub & Spigot Pipe)

	Quantities	Unit of Measurement	U. S. C. I. Pipe & Foundry Co.	Warren Foundry & Machine Co.	Camden Iron Works	John Fox & Co.
14″ Class "B" cast-iron pipe	200	tons	$48.40	$49.50	$51.10	$51.80
14″ Class "A" cast-iron pipe	1550	tons	49.40	50.50	51.60	52.70
6″ Class "A" cast-iron pipe	2	tons	49.40	54.00	51.60	52.70
Flanged special castings	1600	lbs.	.7½	.07½	.06½	.08
Bell and spigot special castings	6000	lbs.	.05½	.06	.06¼	.05⅝
14″ flanged fish trap	1	each	110.00	110.00	50.00	55.00
Total or Gross Sum of Bid			$86,908.80	$88,873.00	$90,832.20	$92,670.90

(Universal Pipe)	Quantities	Unit of Measurement	Central Foundry Co.
14″ Universal cast iron pipe	38,350	ft.	$3.00
6″ Universal cast iron pipe	120	ft.	1.00
Flanged special castings	1,600	lbs.	.07
Universal special castings	6,000	lbs.	.06
14″ flanged fish trap	1	each	65.00
Total or Gross Sum of Bid			$115,707.00

used at regular specified intervals. At Johnstown, N. Y., where the writer is supervising the construction of a storage reservoir, the manual control of chlorine apparatus is used on the present supply, with the result that during the past summer the water has often had a bad taste from an overdose of chlorine. This trouble could have been avoided by the installation of an automatic apparatus or by more careful supervision on the part of the operator.

A Comparison of Costs

In the case of the new supply from Newark, the conditions are almost identical with those of the Le Roy supply, except that the former is considerably larger. Fortunately, the drainage area is six square miles, thereby giving a surplus in the total annual run-off. The reservoir will hold about 200,000,000 gallons, and will have a discharge main 7½ miles long.

Before the Newark gravity plan was decided upon, comparative estimates were made as to the annual cost over a period of thirty years for pumping and filtering water from a creek running near the village, and the cost of the gravity system. In this comparison annual payment on bonds, interest, operation and renewals at estimated intervals were included. The following diagram illustrates the comparative cost of pumping and filtering and of obtaining the water by gravity over a period of thirty years, with an assumed uniform increase in the use of water during the same period. While it was impossible to estimate accurately what future conditions would be, the two curves form an excellent basis of comparison. It was found that after the first six years the cost of the gravity system, including all charges, would be less than the cost of pumping and filtering, in spite of the fact that the pumping station is already installed.

A comparison was also made between the estimated annual income and the annual cost of the entire system, including all expenses in connection with the system in Newark, annual payments on bonds, interest and cost of operation, and it was found that while in the first year of operation about $12,000 would have to be raised by taxation, at the end of the twelfth year the water-works would be self-supporting and that each succeeding year would show a surplus. This curve of income does not include any income from hydrants.

Purity of Supply Insured

It might be asked: Would such a source of supply draining ordinary farm lands, with the farm dwellings on the property, be sufficiently pure? Two agencies combine to make the water from such a source pure. The large storage reservoir serves as a huge settling basin, and it takes a considerable length of time for the water which enters the reservoir at its upper end to reach the outlet pipe. As a further means of precaution, and also to remove the turbidity which sometimes occurs with flood conditions or with a heavy wind-storm, a modern rapid sand filtration plant is installed in front of the dam. While, as was expected, there has been some growth of algae in the Le Roy reservoir, the aerator and filtration plant have been effective in removing taste and odor from the water.

Truce Reached in Septic Tank Patents Litigation

The National Septic Process Protective League, organized in 1916 by cities and other corporations and individuals which were threatened with suit by the Cameron Septic Tank Company, owner of the American patents for the septic process of sewage treatment, has recently reached a settlement with the company for the sum of $5,000. The Cameron Company has agreed to release all members of the National Septic Process Protective League from "any and all claims of infringement, damages, profits, or otherwise, arising in any manner under the Cameron patent." Inasmuch as this sum is less than the attorney for the Association figured it would cost to defend the test case which the League is now defending for the city of Shelbyville, Ky., it was deemed wise to accept the offer of settlement.

The above settlement does not necessarily mean the end of litigation over Septic Process patent No. 634,423 with other than members of the Protective League, as the settlement covers only those who are members of the League.

1919 Convention of American Water Works Association

Brief Summary of Valuable Papers for Water-Works Officials

The thirty-ninth annual convention of the American Water Works Association showed the awakening interest in water-works development after the necessarily dull times during the world war.

Some of the most interesting discussions at the business session of the Association pertained to measures for increasing the membership and making the organization more effective. Official measures proposed for holding and increasing the membership were: (1) publishing the *Journal* six instead of tour times a year and continuing the recent practice of including a considerable number of original contributions; (2) organizing sections in each state where the membership is 20 or more. Increased appropriations for the investigations of important committees and a possible increase in the annual dues were also discussed.

A few of the most important papers are outlined in the paragraphs below.

The Effect of the War Period Upon Water-Works

Comparative records of about fifty water-works plants were discussed by Leonard Metcalf, consulting engineer, Boston, Mass., and it was shown that the gross annual revenue of these fifty plants increased an average of about 23 per cent from 1915 to 1918, whereas the operating expenses, including taxes, increased on an average of 52 per cent. The net revenues applicable to depreciation, interest, dividends and surplus have remained practically the same as they were in 1915.

Unskilled labor costs did not show the effects of the war until about the middle of 1916. In that year they increased about one-eighth over 1915, one-quarter in 1917, and nearly three-quarters in 1918. Wages increased from 27 cents per hour in 1915 to 42 cents in 1918 in the West, from 18 cents to 34 cents in the South, and from 23 cents to 40 cents in the East.

During the war, cast iron prices trebled, but they have now receded to about double the pre-war figures, and it is expected that they will remain at about that level. Coal and fuel oil practically doubled in price, and have receded slightly. Chemicals used in water purification have increased only about one-third, chiefly because of outstanding contracts, but the general market price has increased approximately three-quarters. This, however, has decreased somewhat in the last two months, so that the present price is about 50 per cent higher than pre-war prices.

Reduction of Water Consumption by Pitometer Survey

A paper by George C. Andrews, Water Commissioner, Buffalo, N. Y., showed the excellent work which has been done since 1916 to reduce the water consumption of the city by extensive Pitometer surveys and careful inspection. Buffalo is not generally metered, but an effort is to be made very shortly to reduce the daily pumpage at least 20,000,000 gallons by the installation of about 10,000 meters on house services where tremendous wastes have been found. A comparison between the cost of universal metering and the elimination and control of waste by the Pitometer and selective metering, shows a balance of over $59,000 in favor of continuing control by the Pitometer.

The Unaflow Pumping Engine

The Unaflow Pumping Engine, made commercially successful by Professor J. Stumpf, was described in a paper by D. A. DeCrow, Chief Engineer of the Worthington Pump & Machinery Company, Harrison, N. J. This engine derives its name from the fact that the steam does not counterflow or return over its own path in traveling into and thru the steam cylinder.

The principle is not particularly new, but its development as a practical and economical commercial engine is quite recent, and its adaptation to reciprocating pumping engine practice is new. Some manufacturers of Unaflow engines have guaranteed as low as ten pounds of steam per indicated horse-power per hour, and some of the tests of European-built engines have shown well under nine pounds. With a single cylinder the Unaflow engine has practically the same economy as the best type of compound triple expansion steam engine.

Chlorination as a Check to Water-Borne Typhoid

In a comprehensive paper describing the relation of the chemical industry of Niagara Falls to water-works, John A. Kienle, of the Electro Bleaching Gas Company, New York City, gave a summary of the chlorination of water from the first use of hypochlorite of lime at the Union Stock Yards at Chicago, in 1907, to the use of liquid chlorine by approximately 2,500 water-works plants at the end of 1918. In 1911, four years after the first use of hypochlorite of lime, approximately 500 water plants were equipped with hypochlorite installations. In 1912 the Niagara Falls, N. Y., plant was equipped for the use of liquid chlorine, and was the first to use this method.

In 1907 with no chlorinated water-supplies, the typhoid fever death rate in the registration area of the United States Census Bureau was 30.3 per 100,000, with an estimated number of deaths in the entire country of approximately 30,000 for the year. In 1917 the United States Public Health Service reported that the rate had dropped to 12.3 per 100,000, with an estimated number of deaths of 13,000, and at that time there were about 2,000 chlorinated public water-supplies. According to this, approximately 17,000 lives were saved from death by typhoid in that one year, effecting a saving of over $125,000,000 annally.

The chlorination of public water-supplies is the cheapest insurance that can be obtained, the average annual premium amounting to about 40 cents per 1,000,000 gallons of water treated.

Water-Supply for U. S. Cantonments

A very thoro and interesting paper by Lieut.-Col. Dabney H. Maury gave an excellent idea of the work done by the Construction Division, U. S. A., in providing quick, safe, adequate and sanitary water-supplies for the many camps in this country. Perhaps the most interesting single statement in Col. Maury's paper was his "giving the lie" to the rumor that quantities of cast iron pipe had been shipped from the eastern seaports to the Pacific coast for use in cantonments in the West, and that wood stave pipe had been shipped from the Pacific coast to camps in the East.

Supplying the Front Line of the A. E. F. With Water

Lieut.-Col. Sheidenhelm was detailed by General Black, Chief of Engineers, U. S. A., to tell the members of the Association of the work of the water-supply section in keeping the troops of the A. E. F. supplied with water. The talk showed that the work was chiefly pioneering and not the advanced technical service which is ordinarily attached to water-works practice in this country. Inasmuch as water was considered even more important than food for advancing armies, the work of the able troops and officers in this section may be appreciated when it is realized that advancing troops were practically never without water.

Traffic Regulations With Regard to Motor Fire Apparatus

The Proper Speed for Motor Fire Apparatus and the Control of General Traffic Along Fire Routes

THE advent of motor fire apparatus has greatly reduced the losses from fires to which it has responded, and decreased the maintenance charges of equipment when not in use. It has also brought up in the minds of those interested in the safety of all vehicles using the city streets the important question of the proper speed for motor fire apparatus and of the proper handling of traffic when fire apparatus is approaching.

The use of non-skid tires prevents skidding or side-sway with modern apparatus when operating normally on city streets. Further, it is very seldom necessary to apply the brakes when responding to an alarm, and thus another cause of skidding is eliminated. There is a most laudable desire on the part of the chauffeur driving this apparatus to reach the scene of the fire as rapidly as possible, but a question has arisen in different parts of the country as to what should be the proper speed for motor fire apparatus with due regard to the safety of the apparatus, its personnel, the probable fire loss, the safety of general traffic and of pedestrians crossing the streets. Accounts of smash-ups between motor apparatus and vehicular traffic are common, but in the main are due to the carelessness of general traffic. A survey of the regulations regarding the speed of motor fire apparatus in all parts of the United States shows that the maximum speed permitted for the heavier pieces of apparatus is between 20 and 25 miles an hour, with some exceptions, allowing as much as 30 miles an hour for the chemical apparatus.

Warnings for Vehicular Traffic

Every day in the columns of some paper in the United States one may read accounts of collisions of fire apparatus with automobiles, street cars, trucks or wagons, and accounts of people run over by fire engines. Most of these accidents are due to inefficient means of warning traffic of the approach of fire apparatus.

Fire engines rush along to the scene of a fire at such a speed that they cannot come to a sudden halt. If collisions are to be avoided, pedestrians and vehicles must either get out of the way or stop in locations where they will not interfere with the passage of fire apparatus. A great number of accidents occur at the crossing of busy avenues with side streets.

As a warning for traffic to clear the way, fire engines are equipped with bells, gongs and hand-sirens. Usually these signals are fairly efficient, and provided there is no great noise on the intersecting street or avenue, they will be heard before the engine gets to the crossings. But where the roar of the elevated trains competes with the clanking of street cars and the rumbling of iron-shod wagon-wheels along cobblestones, the warning signal often cannot be heard until the fire apparatus approaching from a side street is too close to the crossing to be avoided. Traffic should be warned in time—the warning should be sounded right at the crossing.

The following incident happened only a few years ago and demonstrates the inefficiency of signals attached to fire apparatus. The fact that the approaching engine was horse-drawn in no way dims the lesson drawn from the tragedy.

Persons familiar with New York City will recall that Second Avenue in the neighborhood of 67th Street is paved with cobblestones and that at times the noise of passing trucks, wagons, street cars and elevated trains is barely short of deafening.

It was in the afternoon. A fire engine drawn by three powerful, straining horses was sweeping down 67th Street toward Second Avenue, gong ringing and steam whistle blowing. A street car full of women and children was rapidly approaching 67th Street on its way down-town. A train of six wagons loaded with stones was bumping and rattling slowly past, holding up a north-bound car whose impatient motorman clanked his gong incessantly. Just then an

TRAFFIC SIGNAL TO WARN VEHICLES OF THE APPROACH OF FIRE APPARATUS, WEEHAWKEN, N. J.

elevated train roared along overhead.

The conglomeration of noises drowned the fire engine signals. The car kept on. The motorman heard no warning until it was too late. The driver of the fire engine thought the road was clear. The engine plunged along and crashed into the side of the car. Two firemen and three passengers were killed and a dozen persons injured.

An efficient signal posted at important street crossings would prevent such occurrences. Such a signal must have a penetrating characteristic note that will not blend in with other noises and cannot be mistaken. It must be dependable in action and absolutely weather-proof. Snow, rain and wind must have no effect on its operation. Such signals may be obtained at low cost, and their installation in a community will effect great savings in lives now needlessly lost, property needlessly damaged, and pensions and compensations needlessly expended.

The Klaxon signal illustrated has been used to very good advantage for a number of years in Weehawken, N. J. The corner on which the picture was taken is almost always congested. Street car lines cross each other at this point, and practically all the vehicles going to and from New York City via the 42d Street Ferry pass this corner. The intersecting streets are both narrow, and it is practically impossible for fire apparatus to pass unless the corner is freed from all traffic. Since the installation of the signal, fire engines pass this point at high speed and no accident has been recorded.

Along Central Avenue in East Orange, N. J., Klaxons are installed at frequent intervals as warnings to traffic and to pedestrians. The efficiency of the fire department has been increased and the number of accidents considerably reduced.

In Pittsfield, Mass., the main fire station is located on a side street which is rather narrow. No vehicles, motor or horse-drawn, are permitted to park on this street, and an ordinance has been passed so that it is a one-way street in the direction of passage of motor apparatus. In the center of the station next to the desk of the doorman are two switches, each of which operates two of the three Klaxon horns mounted on North Street, the main thorofare which runs at right angles to the narrow street leading to the central station. One horn is located at the corner of the street leading from the fire station, the second at the corner of the main traffic street to the left, and the third an equal distance on the main thorofare to the right. The horns are sounded as soon as the alarm is received and for a sufficient length of time to permit the apparatus to pass these points. They can be heard at a considerable distance and have proved very effective in keeping the street clear for motor apparatus.

The Use of Signs and Semaphore Warnings

In Portland, Ore., effective use has been made of illuminated semaphores. The use of these railway semaphores in Portland was described in full on pages 524 and 525 of the December, 1917, issue of THE

American City, from which the following is quoted:

"The railway type of semaphore was adopted because of its reliability. We have installed the motor-driven, two-position, upper right-hand quadrant type with a 6-foot blade having the word "Fire" painted on it, as shown in the illustration. Attached to the edge of the blade are eight 20-watt ruby incandescent electric lamps, which are lighted only when the blade reaches a horizontal position. The signals are attached to iron poles at such a height that with the blade extended horizontally they are 19 feet above the ground. The gongs are 14-inch, motor-driven devices, which operate when the lamps are lighted and make sufficient noise to attract the attention of vehicular traffic and motormen in enclosed cars.

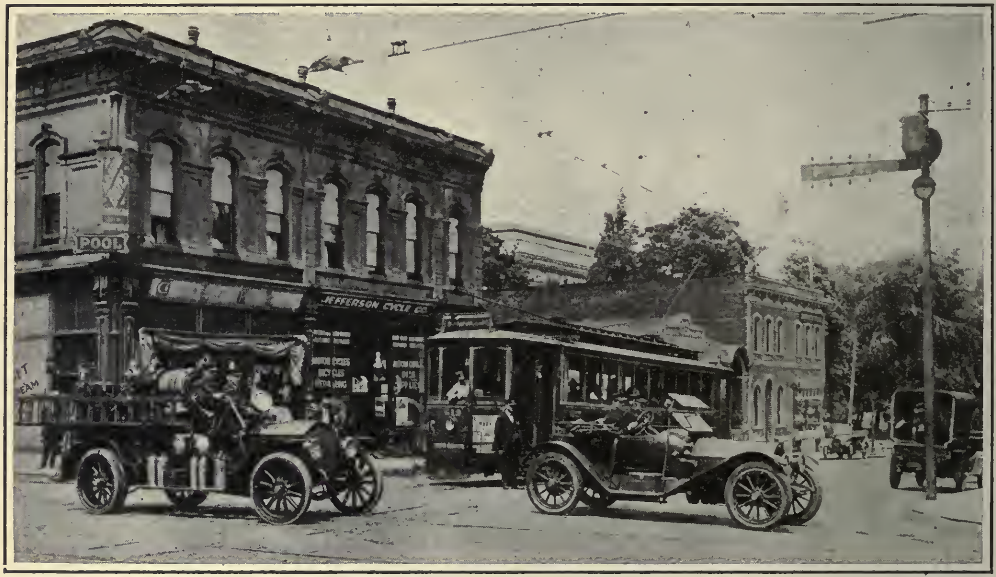
"The semaphores receive their operating current from the nearest available supply, either overhead or underground, for which the city pays the flat rate of $4 or $5 per year per semaphore, depending on the amount of current used for holding the blade in a normal or vertical position.

"Each signal is individually manipulated by a switch in the central fire alarm telegraph office connecting, thru pairs of telephone wires in the underground cables of the telephone company, with a relay at the semaphore station. These relays in turn control the local supply of current used at each signal station, thereby making their handling very flexible.

"The maintenance cost has been nominal; occasionally a defective protecting fuse allows a blade to fall down without operating the lights or the gong. This has been quickly remedied by detailing a fireman from the nearest fire station to substitute a new fuse.

"The fire department has found the semaphore to be a very valuable adjunct, and feels that its use has prevented many accidents by adequately and promptly warning street cars and traffic of the approach of apparatus."

In Westerly, R. I., where one of the heavy motor trucks has to make a very short curve near the fire station, the danger from interfering traffic has been minimized by the installation of a gong and light system which operates from a switch installed on the jamb of the door at the station in which the truck is located. This was fully described in the October, 1917, issue of The American City, on page 333.



RAILWAY SEMAPHORE AND GONG TRAFFIC SIGNAL, PORTLAND, ORE., AN EFFECTIVE COMBINATION OF VISIBLE AND AUDIBLE SIGNALS

There are a great many cities which, like Providence, R. I., display conspicuous signs from the guys of trolley wires, warning all traffic and street cars that the intersection is a fire crossing, and causing most drivers to proceed cautiously.

This is one of the silent signals which are heeded by a great many drivers, but there is a careless class of motorists which must be taken into consideration. Probably it is far better to install some kind of signal which makes considerable noise of a peculiar type to call the attention of pedestrians and warn them that fire apparatus is approaching.

Assistant Chauffeurs Needed

In many cities sufficient cognizance has not been taken of the fraility of human life, in that very frequently the man occupying the seat next to the chauffeur is not fully qualified to operate the machine in case the chauffeur becomes incapacitated. A piece of heavy motor fire apparatus tearing down the street at anywhere from 20 to 30 miles—possibly 40 miles—an hour would be a most dangerous element if illness should suddenly deprive the driver of his control of the machine. This question has been brought up in railroading, with many arguments to show the need of an assistant engineer in the driving cab. The need is even greater with motor apparatus going at reasonably high speed thru city streets where if control is lost for an instant the apparatus may charge into the crowd which always gathers, and may cause great loss of life and damage to property.

The Control of Traffic Running Parallel to Fire Apparatus

In most cities the regulations for fire apparatus give it the right of way, and the drivers of other vehicles are required to draw to the right-hand curb, or as near as possible and parallel to the curb, and remain still until the fire apparatus has passed. Furthermore, street cars are usually required to stop on the approach of apparatus. The few cities which have no traffic regulations regarding fire apparatus, such as Atlanta, Ga., depend entirely upon police control at crossings to clear the way upon the approach of fire apparatus, but do require that other vehicles go to the curb upon the approach of the apparatus.

Control of Traffic at Hydrants

Practically all cities have ordinances prohibiting any vehicles from standing within a specified number of feet of fire hydrants. Some cities go so far as to install posts or signs indicating the limit of this distance, and others paint a space on the curbing red to warn all drivers.

General Summary of Traffic Regulations

The following summary is prepared from a few of the replies received to inquiries thruout the United States regarding the control of the speed of fire apparatus and general traffic. The reports are given only in outline form in order to save space.

Albany, N. Y.—Under the traffic law of 1907, fire apparatus responding to call is restricted to 25 miles an hour. The Chief and his assistant usually travel faster than the apparatus, but all apparatus and vehicles returning from alarm must obey traffic laws. Traffic offiecrs stationed at the intersections of the principal streets hold up all vehicles, to provide clear passage for fire apparatus. Street cars are required to stop at approach of apparatus. No automatic signals are used. Street cars are required to run slowly on streets where there are fire houses. All vehicles are required to go to the right-hand curb and stop until fire apparatus has passed.

Atlanta, Ga.—No traffic regulations regarding fire apparatus. Police at crossing are required to clear the way when fire apparatus approaches.

Baltimore, Md.—Fire apparatus must not exceed a maximum speed of 18 miles per hour. Klaxon horns are installed on fire alarm boxes in the congested districts, and are started whenever the apparatus leaves its quarters.

Bridgeport, Conn.—A signal system of horns is used at the corners of main thorofares in congested districts. The speed limit for fire apparatus is 15 miles per hour; for truck and hose wagons 20 miles per hour; chemicals 30 miles per hour; Chief and Assistant Chief, no speed limit.

Brookline, Mass.—After a severe smash-up in January, the Town Council suggested a system of lights along the roadside for 100 yards each side of the fire house, so arranged that at night a red line would show to warn advancing trolley cars that apparatus was about to leave the station. This matter is under consideration.

Denver, Colo.—Police and fire apparatus have the right of way on all streets and at all intersections. There are no signals installed to warn pedestrians of the approach of fire apparatus, except the sirens on the vehicles, and red lights. Sirens or other whistles are prohibited except for use by the police and fire departments. Traffic is required to go to the right-hand curb and stop on the approach of fire apparatus. Fire apparatus is required to regard the speed laws of the city, which permit speeds varying from 12 to 20 miles per hour.

Manchester, N. H.—Motor fire apparatus speed 15 miles per hour in the compact part of the city, and 10 miles when approaching a street crossing.

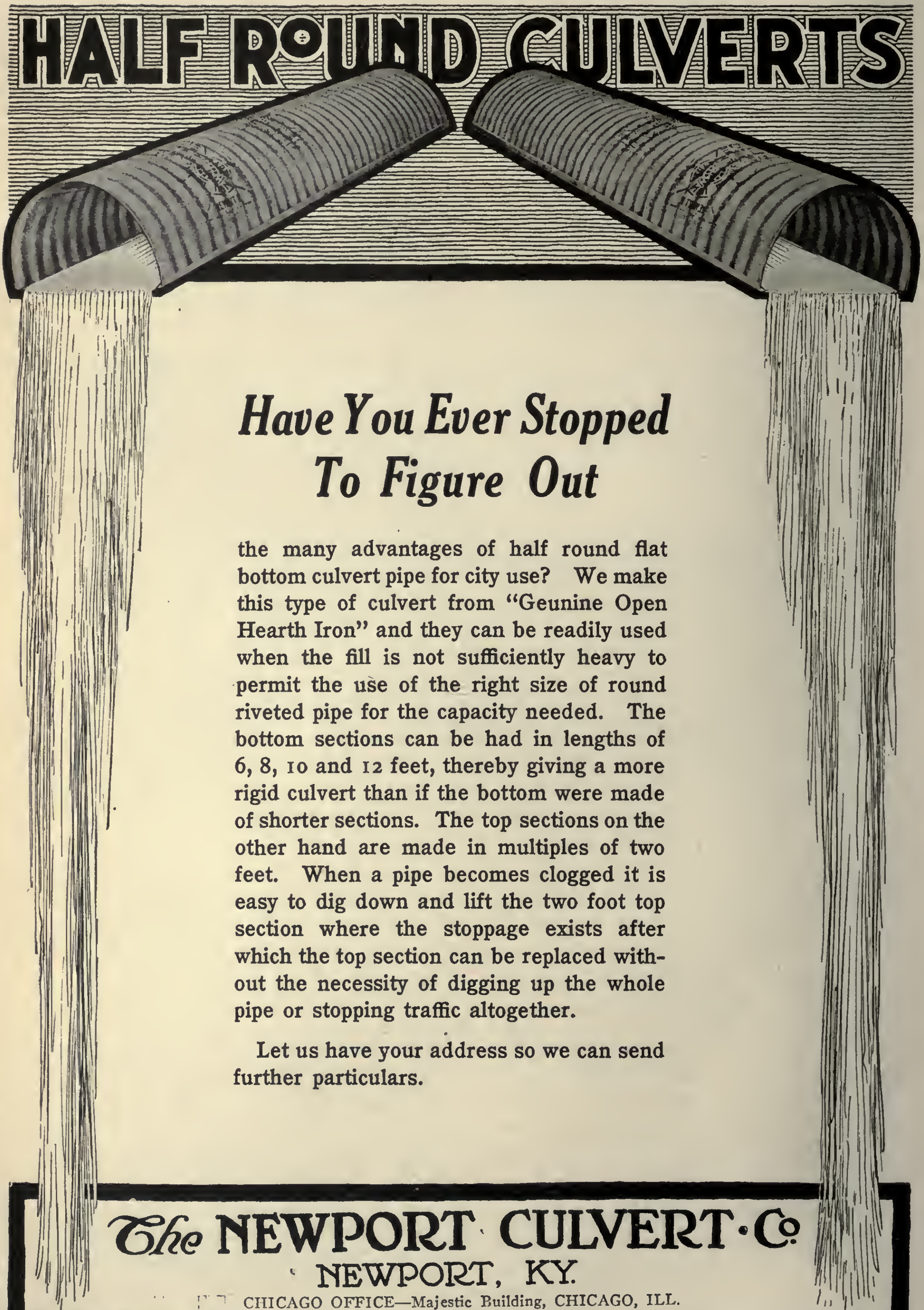
Milwaukee, Wis.—No speed laws. Fire apparatus has right of way while responding to an alarm. At other times it must conform to speed laws permitting speeds of 15 to 25 miles per hour. The Chief Engineer of the fire department makes regulations for speed of apparatus. He has set 20 miles per hour for motor pumping engines and hook and ladder trucks, and 25 miles per hour for combination hose and chemical wagons while responding to a fire. These figures were arrived at after observing conditions thruout the country and after a number of accidents had taken place where no speed limit was observed.

New Haven, Conn.—Speed of heavy fire apparatus, 15 miles per hour; lighter apparatus and Chief's car, 25 miles per hour. Instructions are given to drive more slowly on slippery pavements. Fire apparatus has right of way, and all vehicles must draw to the curb upon approach of apparatus.

Philadelphia, Pa.—Fire apparatus speed limited to 18 to 20 miles an hour when responding to alarms. The fire apparatus signal is three or more blasts of the whistle. The right of way is given to fire apparatus. All vehicles are required to draw to the right-hand curb and stop on approach of fire apparatus.

Portland, Ore.—Speed limit 25 miles an hour when answering a call. Traffic signals as noted above.

St. Louis, Mo.—Motor apparatus speed limit, 25 miles an hour going to fire, and 20 miles an hour on move-ups. Apparatus has right of way thru any procession when responding to alarms. Must obey traffic regulations when returning. Police officers clear street intersections on approach of fire apparatus. No traffic warnings are installed to warn pedestrians.



Have You Ever Stopped To Figure Out

the many advantages of half round flat bottom culvert pipe for city use? We make this type of culvert from "Geunine Open Hearth Iron" and they can be readily used when the fill is not sufficiently heavy to permit the use of the right size of round riveted pipe for the capacity needed. The bottom sections can be had in lengths of 6, 8, 10 and 12 feet, thereby giving a more rigid culvert than if the bottom were made of shorter sections. The top sections on the other hand are made in multiples of two feet. When a pipe becomes clogged it is easy to dig down and lift the two foot top section where the stoppage exists after which the top section can be replaced without the necessity of digging up the whole pipe or stopping traffic altogether.

Let us have your address so we can send further particulars.

The NEWPORT CULVERT Co
NEWPORT, KY.
CHICAGO OFFICE—Majestic Building, CHICAGO, ILL.

How Texas Fights the Rat

By Dr. A. L. Lincecum

Epidemiologist, Texas State Board of Health

ONE of the most extravagant agencies in the using and destroying of foods is the rat. For example, Texas has a population of 4,472,494; it also has a rat population of 5 per capita, or 22,362,470 rats. A rat eats a minimum of $1 per year and destroys many times this amount. So the citizens of Texas are unconsciously spending $22,362,470 to feed the rats each year. Add to this the value of goods, merchandise, foods, etc., damaged and destroyed, and you will have a stupendous sum of money wasted.

Rats Carry Disease

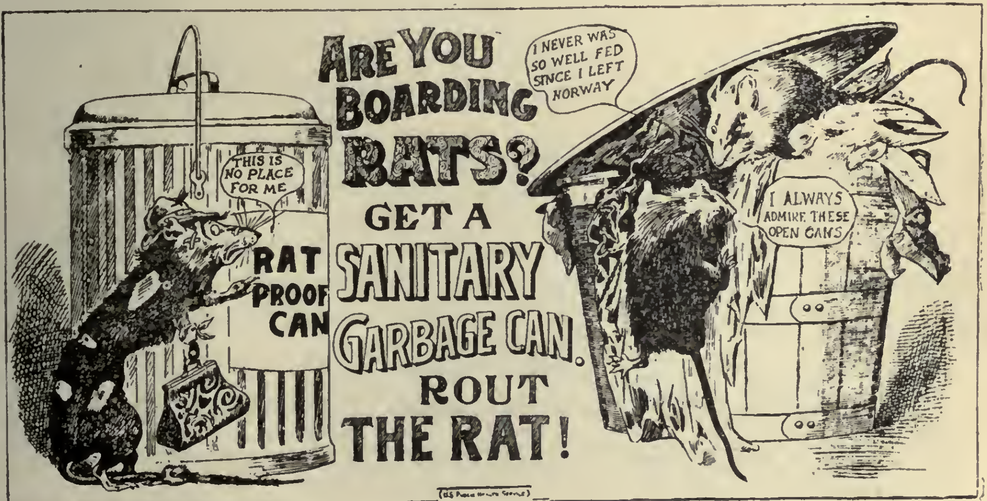
All rats have fleas on them. These fleas feed upon the blood of the rat. When the rat dies and its body becomes chilled, the flea leaves it and seeks a warm host, and this host may be a man, a woman, or a child. Now if this rat died from bubonic plague, these fleas are filled with blood loaded with germs of bubonic plague, and the person bitten by the flea will develop the disease and die. Rats also have leprosy, charbon and other diseases. Autopsies held on rats prove them to be very important carriers of intestinal parasites.

PLACING SNAP RAT TRAP IN CULVERT

The Norway, or brown, rat is the strongest and most vicious type; other species leave upon its arrival. This rat burrows under barns, low buildings, garbage dumps, wooden sidewalks, etc., often undermining the foundation of barns and other buildings.

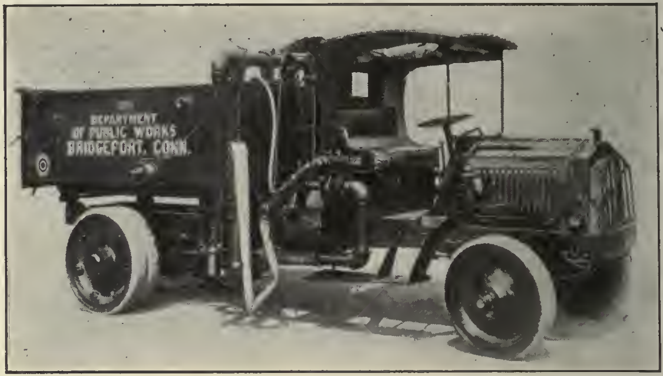
The Alexandrine, or black, rat is slender, with a tail longer than its body. This rat is a climber and lives in lofts, garrets and roofs.

Field or wood rats are of several vari-


ARE YOU BOARDING RATS?
GET A SANITARY GARBAGE CAN.
ROUT THE RAT!
THIS IS NO PLACE FOR ME
RAT PROOF CAN
I NEVER WAS SO WELL FED SINCE I LEFT NORWAY
I ALWAYS ADMIRE THESE OPEN CANS

A CARTOON DISTRIBUTED IN THE TEXAS ANTI-RAT CAMPAIGN

Remember this—



The Otterson Auto Eductor

is a quick, dependable, economic, cleaning equipment suitable for

Cleaning Catch Basins

The old filthy, costly, laborious hand-method is gone from up-to-date cities. The Otterson Eductor retains the debris in the body of the machine, and does the whole job quickly.

Cleaning Privy Vaults

All contents removed without nuisance in the quickest possible time, at low cost. Small cities and towns can take care of all privy vaults in town with an Otterson Eductor, saving time and money.

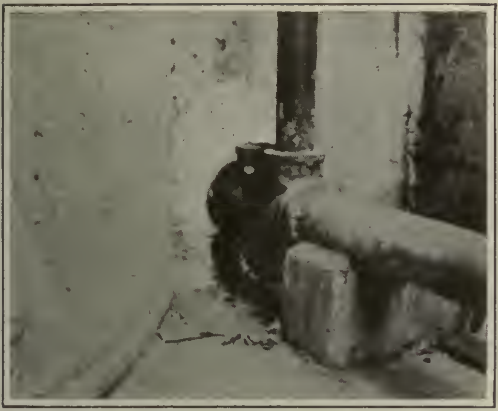
Unwatering Trenches

In sandy soils, where water and quicksand enters sewer or water pipe trenches, the Otterson Eductor can remove the water, not simply pumping it over the top to run in again, but removing it in the tank body of the machine.

EQUIPMENT MOUNTED ON ANY 5-TON CHASSIS OF SUITABLE STANDARD MAKE

THE OTTERSON AUTO-EDUCTOR COMPANY

817 Fairbanks Building **Springfield, Ohio**



PROPER METHOD OF REPAIRING HOLE AROUND SEWER PIPE ENTERING BASEMENT

eties, living in any available harbor, feeding on growing crops, shocked grain, chickens and eggs.

To destroy the rat pest means to carefully correct every sanitary defect on all premises in the community, not overlooking the trash and garbage dumps, for these dumps furnish both home and food for the rats propagating therein.

Trapping

Various types of traps have been used with more or less success. The snap trap, which kills the rat when it catches him, is especially recommended. Rats are very cunning in disposition. Having associated with mankind, they seem to have learned to be suspicious of every tempting bait and trap placed for them. Therefore do not trap the same spot each night, but locate the rat runs and place your trap along these runs each fourth night, using for bait some food upon which the rats are not feeding. The trap should be scrubbed, for rats avoid a trap that has the odor of blood upon it.

Poisoning

Various poisons have been used. The following suggestions have been quite successfully put into practice. For poisoning use one part of barium carbonate with four parts of meal or flour, or eight parts of oatmeal mixed into a stiff dough. The barium may also be sprinkled on fish, toasted bread or moistened bread and butter.

Strychnine crystals may be pushed into meat sausage or bread.

Powdered arsenic may be used like barium or strychnine in the methods described above. Handle all rat poisons with gloves, or rats will not eat it. Place it in rat runs or holes. Cover all water and food.

Keep the poisons out of the reach of children, dogs and cats.

Sources of Food for Rats

Kitchen waste, excess chicken feed, waste grain from horse, cow, and hog feeding, grain, foods, merchandise stored in buildings not rat-proofed, garbage dumps, all furnish an abundance of food for rats. All of these wastes can be remedied by using care in handling the feeding of domestic animals.

For destruction of rat harbors and control of waste foods, the following suggestions are made: Use metal garbage cans for kitchen waste. Keep them well covered and use care in emptying refuse therein, seeing that no waste is spilled on ground. Elevate the can on a post or frame 18 inches above ground.

Privies should have concrete foundations and floors, or be elevated 18 inches on rat-proofed posts or blocks. They should be so built that rats cannot enter the receptacle, for it is possible that the rat may include the pantry on his itinerary for the night's ramble.

Poultry coops and houses should be rat-proofed and elevated so no rat harbors are

BILLBOARD PUBLICITY FOR ANTI-RAT CAMPAIGN

Tarvia

Preserves Roads - Prevents Dust

The illustration on the left pictures one of the Tarviated roads of Jefferson County, N. Y. The black lines on the map show the remarkable mileage of Tarvia roads in Jefferson County, N. Y.

—in Jefferson County, N. Y.

JEFFERSON County is solving the problem of low-cost, durable roads by the use of Tarvia and by co-operative action between the town and county authorities.

The towns provide machinery, tools, materials and labor. The county provides and applies the Tarvia. In addition, it makes a substantial money grant towards the cost of the improved road.

Maintenance costs of the new roads are adjusted on a "fifty-fifty" basis that is entirely satisfactory to both parties.

By this means, in less than three years, 166 miles of modern, dustless, mudless, easy-traction Tarvia roads have been completed in this one county alone. These roads are waterproof, frost-proof and automobile-proof.

Mr. Henry S. Ball, County Superintendent, says that these Tarvia roads "are in better shape today than when they were first built," and he sees "no reason why they should not last indefinitely." Mr. Ball is right, because his experience is in line with that of users of Tarvia in every part of the country.

Doubtless this co-operative plan will be of interest to other highway authorities. If so we will gladly send full details on request.

Special Service Department

This company has a corps of trained engineers and chemists who have given years of study to modern road problems. The advice of these men may be had for the asking by any one interested. If you will write to the nearest office regarding road problems and conditions in your vicinity, the matter will be given prompt attention.

The Barrett Company

New York, Chicago, Philadelphia, Boston, St. Louis, Cleveland, Cincinnati, Pittsburgh, Detroit, New Orleans, Birmingham, Dallas, Kansas City, Minneapolis, Nashville, Salt Lake City, Seattle, Peoria, Atlanta, Duluth, Milwaukee, Bangor, Toledo, Washington, Johnstown, Lebanon, Youngstown, Columbus, Richmond, Latrobe, Bethlehem, Elizabeth, Buffalo, Baltimore

THE BARRETT COMPANY Limited:
Montreal, Toronto, Winnipeg, Vancouver, St. John, N.B., Halifax, N.S., Sydney, N.S.

provided under them. Correctly built feeding troughs should be used, to prevent waste which might furnish food for rats.

Barns, cribs, outhouses—in fact, any building so constructed as to harbor rats—should be rat-proofed. If this is impossible, the building should be demolished and rebuilt.

Rat-Proofing

Methods of rat proofing vary according to the character of the building. Some wooden buildings may be rat-proofed by elevating them 18 inches above the ground on piles covered with sheet metal, extending 18 inches from margins of pile. Other buildings may be rat-proofed by the use of marginal concrete, with steel screens. All doors should be flashed with metal.

CONCRETE SIDEWALK AND SILL USED TO RAT-PROOF A HOUSE

The Movies in an Average City

By Carl Holliday

Dean, Toledo University, Toledo, Ohio

LET me say, in opening, that I was for some time director of a department in one of the largest moving-picture corporations in the world. I cannot be accused, therefore, in what I am going to say, of prejudice—unless it be prejudice in favor of the business. I propose to take as an example an average large city of America and show the exact physical, financial, mental, or moral state of the cinema theaters in that city. The place I select is Toledo, Ohio, with about 250,000 inhabitants, an average large city of America.

A graduate student in the Municipal University of Toledo, John Phelan, a man well past thirty years of age, made a painsing survey of the moving picture business of the city. He personally visited all the theaters several times, inspecting most of them from top to bottom, interviewed their owners and managers, obtained the opinions of prominent real estate firms, and examined the tax books, the police reports, and the records of the municipal courts. What were the findings for this average city?

To-day there are 56 licensed picture and amusement places in this municipality of 250,000. Of these, 45 are used almost exclusively for cinema exhibitions. It is significant to note that altho during the last five years the city has increased steadily in population, the number of "movie" houses has steadily decreased. This would indicate that the neighborhood theaters situated in the residence districts, which might have been powers for good in supplying clean local entertainment, failed in their mission.

The Investment and the Annual Costs

The valuation of the lands and buildings used for this purpose was placed by prominent real estate dealers at $6,200,000. Twenty of the theaters are in the highest-priced ward of the city, on sites that are the envy of all local traders in municipal

FIRE drills are good, but not infallible, In spite of the drill, when a real fire burst out, this little boy, stricken with senseless panic, hid in a dark cloakroom.

Who is supposed to guard the lives of school children anyway ?

"NOW, Willie, be careful when you cross the tracks."

Mother stands in the doorway, watching her little boy running down the street.

And then, turning to father she says, "I always worry till I think he is safe inside the schoolhouse door."

But once safely inside that door, Willie is supposed to be out of danger for the next six hours at least. Unthinking parents never stop to consider the daily fire menace that exists in school buildings.

Take These Plain Facts

Some five billion dollars of business property has been protected from fire by automatic sprinklers.

State Industrial Commissions are guarding the lives of factory employees by requiring this same unfailing protection in business property.

The United States Government insisted on war industries being so protected.

You have a hazy idea that school buildings are safe because somebody told you so. "Fire drills" and "fire escape" sound safe enough — fine — until the flames are leaping through the window.

School fires start in mysterious out-of-the-way places, and smolder along unnoticed in a vacant room or closet. Then suddenly there comes a terrible roaring and in a few moments the whole building bursts into flame.

Investigate conditions in your school yourself. Don't let anyone assure you that your school is safe enough till you understand what that safety means. Don't fool yourself because the doors open outward and the stairway is of iron.

You could provide a dozen, yes fifty minor "safeguards" and only find when the schoolhouse is burned up, that all these superficial methods of protection will never accomplish one-tenth what the Grinnell Automatic Sprinkler System will. The Automatic Sprinkler system equals a hundred firemen right there, always on the job.

As soon as the fire starts in the building, these automatic firemen come into action and drown the fire before it becomes a menace.

Read—"Fire Tragedies and Their Remedy"

Parents, trustees or officials will find in "Fire Tragedies and Their Remedy" the unvarnished truth and a path of imperative social service. Write for it today. Address General Fire Extinguisher Company, 283 West Exchange St., Providence, R. I.

GRINNELL
AUTOMATIC SPRINKLER SYSTEM
When the fire starts the water starts

property. From a thoroly reliable renting agency the information was obtained that 14 of these theaters alone pay an annual rental of $154,000, and that in remodeling one of the buildings $64,000 was spent and in another instance $50,000. Ten of the buildings are owned by the exhibitors, but all the other managers annually pay $239,000 for rent.

In this city the projecting machines are valued at more than $35,000, while the curtains and screens cost at least $6,000. Careful investigation revealed that a little over $8,000 per week, or $416,000 yearly, is being expended for the rent of films.

And how many thrills per day satisfy a modern American? The average daily demand per theater in this city of 250,000 very modern Americans is 6 reels, or 6,000 feet. In other words, these citizens with their 45 theaters devour approximately 45 miles of pictures daily! The investigator found that 45,000 tickets (18½ rolls) were handed out daily at the window. This item alone, with rolls costing $2.30 apiece, amounts each year to $15,529.60.

In this average American town four movie theaters use both high-priced orchestras and well-paid organists. Two of these houses have pipe-organs valued at $20,000 each, while the instrument in a third cost $10,000. A conservative estimate of all the musical devices in the cinema houses places their price at $140,000, and the annual wages of all the musicians amount, at the very lowest calculation, to $92,400. What a power for the uplift of public musical taste these expenditures could be! But, frankly, are they?

Large, however, as this outlay is, the amount paid for advertising is even greater. In this typical city there are three large dailies and eight similar publications in which theaters may profitably advertise. On October 5, 1918, one of these papers alone carried ten pages of cinema announcements, costing $2,500. This, of course, was exceptional; but this one paper averages two pages of such notices per day, for which it receives $26,000 per year, and the other two dailies together average $40,000 annually. Thru sign-painters and bill-board companies the investigator learned that the posters, signs, billboards, and similar forms of advertising are consuming each year slightly over $100,000 of the theater money. In short, an average city of 250,000 is spending annually over $166,000, or about 65 cents per citizen, for the mere announcement of the "next show."

A close examination of the tax records revealed the fact that the annual assessment on the lands, buildings, and equipment used for cinema purposes is $101,717.23. But to this must be added a federal tax and a county tax of $100 each on every picture theater in the city—a total of $9,000 for the 45 houses actively engaged in the business. It is a rather heavy tax on the people's most popular means of entertainment—approximately 44 cents for every man, woman and child in the city.

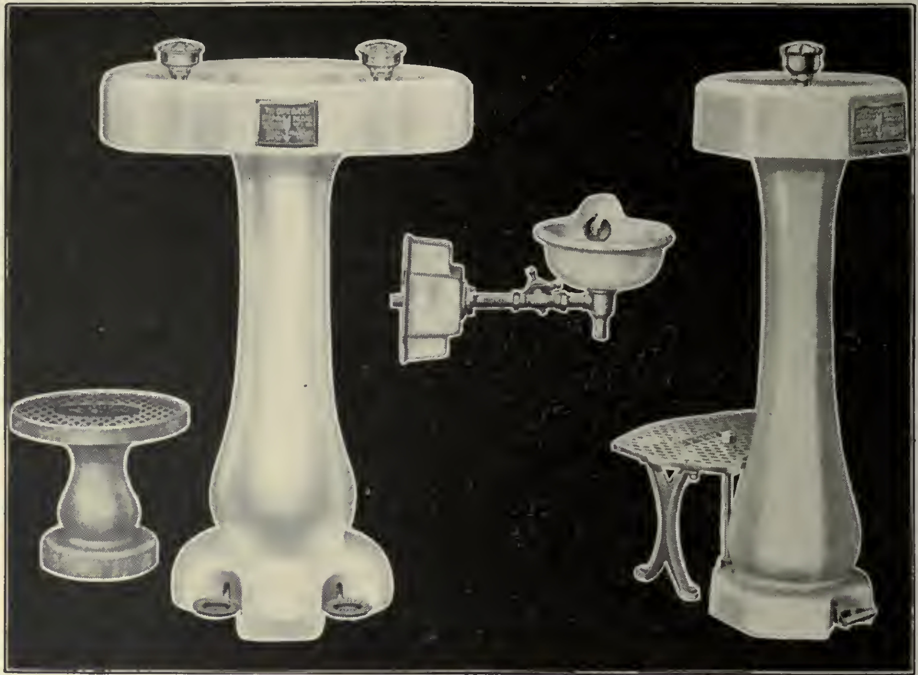
Nor does this end the stream of expenditures for the most entrancing form of amusement ever introduced into municipal life. In the city under investigation the electricity for machines and lighting cost during the past year $7,020; the heating of the 45 houses called for $45,000; the 344 men and 104 women, employed at an average wage of $15 per week, as ticket sellers, ushers, attendants, and cleaners, received at least 348,000; while the machine operators, paid from $18 to $35 per week, obtained, at a most conservative estimate, $55,000.

Consideration must also be given to the fact that in this average large city, as in many others of the same size, there are 4 film exchanges employing 15 people, with an annual pay-roll of $17,000, and a rental of $6,000—a total of $23,000.

Are There Any Profits?

By this time the reader will ask, "With this tremendous expenditure, do the picture theaters make any money?" Plenty of it; possibly more than is made in any other business in which so small an amount of the company's own personal cash is spent from week to week.

As in any other industry, the income fluctuates—in this case being influenced by the kind of pictures, the price of admission, the weather, the time of the year, the significance of holidays, and the rulings of the municipal board of health. But, as we have noted above, the attendance averages 45,000 per day, 315,000 per week, 16,425,000 per year. Six down-town theaters alone average 75,000 per week, and one house has



MUELLER
Sanitary Drinking Fountains

For public parks and public buildings—as well as private homes—the variety and beauty of this line is unequaled. There is a style for every need.

The *MUELLER* principles of construction conform to the most approved ideas on sanitation, and are recognized everywhere to be most efficient and dependable in actual service.

The name *MUELLER* is the stamp of unequaled quality in plumbing goods—assuring real satisfaction—paying dividends thru a saving in repair costs.

Especially equipped to furnish unusual fountains for unusual conditions—with perfect mechanical installation.

Write today for full information and prices. Mail orders given immediate attention.

H. MUELLER MFG. CO., Decatur, Illinois, Phone Bell 153
Water, Plumbing and Gas Brass Goods and Tools

New York City, 145 W. 30th St.
Phone, Farragut 5397

San Francisco, 635 Mission St.
Phone, Sutter 3577

Sarnia, Ontario, Canada

frequently had 9,000 patrons in a day. The admission price varies from 7 to 39 cents, but after careful investigation our investigator found that 15 cents is a fair average.

This means that there passes every year thru the little windows in front of the theater the surprising total of $2,463,750—almost $10 annually for every man, woman and child in the city. Now, painstaking computation shows that the expense of maintaining the shows—films, music, advertising, wages—is approximately $1,300,000, leaving as profits and interest on investment more than $1,100,000. As, however, only 10 of the companies own the houses they operate, and as in some instances not even the chairs and screens are owned by the operating concerns, it is clear that in not a few cases about the only investment made is the week-by-week payment of expenses from the week-by-week sale of tickets. In other words, in very few instances does the clear profit fall below 60 per cent annually, and undoubtedly in several instances it rises to more than 100 per cent on money that was not originally the manager's or the company's own cash. This is making 60 to 100 per cent profit on what is certainly a very small risk.

The Physical Conditions

For all this, what does the public obtain from these theaters besides entertainment? In other words, what are the conditions under which the amusement is gained? The seating capacity of the Toledo picture houses is 55,132, or an average of 811 seats. But 14 of these places alone possess 20,000 seats, and the remainder average actually about 600 seats.

Now, just here is where the moving picture managers in general thruout America knowingly sin against the public. The narrow floor space per individual commonly makes the accommodations nothing short of uncomfortable. The crowding into one black hall all the people that the letter of the law allows leads not only to practical unhappiness, but to promiscuous mingling with undesirables, liability of theft and personal insult, physical contact with the unclean and the diseased, and an opportunity for the beginnings of immorality, that some day may arouse the public to call for a reckoning.

Too often, moreover, our investigator found the air within the houses stagnant and indeed positively offensive. Nor was it the smallest theaters that were the greatest sinners. On account of the large patronage and the consequent congestion, several of the more pretentious houses had much poorer ventilation and more evidence of lack of sanitation than the humbler theaters.

The causes of this danger from foul air are not hard to find. The odors from the garments of mixed audiences are ever present; some Americans positively refuse to be clean, and the managers cannot be blamed for the prejudices of such individuals. For the dimensions of the rooms—including their height—there are, however, generally too many seats. Then, too, almost invariably these theaters are located in or near the middle of a block—48 are thus located in Toledo—and they open upon a crowded street in front and a dirty alley in the rear. The location means lack of sunlight, and that means difficulty in detecting the exact condition of seats and the space under the seats.

In Case of Fire

How is the picture-going public in this average city protected in case of fire? Because of the high inflammability of the films, the intense heat of the machines, the darkness, and the large number of people in the small space, there should probably be more protection here than in any other type of amusement house. Our investigator found 39 machine booths wholly of metal, 3 metal-lined only, 2 made of metal and concrete, and 3 of concrete. With the possible exception of the 3 metal-lined enclosures, this is an excellent report; it is evident that the average manager is careful enough in this matter.

An investigation, however, of 49 places wholly or sometimes used for pictures showed but 240 fire extinguishers, or less than 5 per house. Again, when the exits of the 56 amusement places—of which 45 were daily used for cinema purposes—were counted, it was found that the actual specific average is only 3 exits. With but 3 doors for the escape of an audience from a long, narrow, darkened room, what are the natural inferences as to the results of a fire?

TRADE **MINWAX** MARK

STRUCTURAL INSURANCE

Permanent Structural Protection

Measure the value of a system of structural protection by its cost per year of service—not by its first cost.

You're not buying waterproofing—you're buying paid-up insurance against the destructive effects of moisture and time.

The permanent protection afforded by **Minwax** would make it the least expensive waterproofing you can buy, even at ten times the cost.

The permanent qualities of **Minwax** make its first cost the one and only cost chargeable against it.

You pay for it only once.

Let us send Bulletin 11.

MINWAX COMPANY, Inc.
18 East 41st Street, New York

Chicago Pittsburgh Cleveland Detroit Baltimore Cincinnati
Portland Seattle San Francisco Los Angeles

The question may, however, be asked: What are the actual possibilities of fires in such places? The investigator whose findings are here presented is, of course, only human and liable to errors in judgment: but his inspections convinced him that the electric wiring in 44 of the entertainment houses was good, in 8 scarcely fair, and in 4 positively poor. As for heat, 37 were found to be using steam or hot water, while 3 use gas stoves and six use coal stoves. What excuse can be offered for the use of coal or gas stoves in such a place?

The Surroundings

An entertainment may be judged largely by the environment it seeks or the environment it attracts. The investigation revealed that approximately 30,000 young, unmarried men and women live in 250 rooming houses and apartment houses within ten minutes' walk of cinema theaters. In the lives of these 30,000 the pictures might be a power for good in the imparting of the correct views of life and the giving of untainted amusement. But, whether by accident or thru attraction, 54 rooms for promiscuous dancing are in the immediate vicinity of the theaters, and more than one-third of the 408 saloons possessed by the city are in the same ward where the largest number of picture houses are located. This latter fact may, however, be commendatory; for nothing else is so great a rival of the saloon in attracting men as is the cinema. But to quote the exact language of the investigator:

> "The saloons which are most patronized are those in the neighborhood of moving picture houses which cater almost exclusively to the vivid portrayal of underworld life, vampire life, shady sex problems, exhibitions of the scantily clad, and stirring scenes of shooting and stabbing. Toledo has at least six houses which seemingly make a specialty of catering to the questionable and suggestive phases of life. Many young couples are seen to meet at the evening shows, apparently on short acquaintance, and, in far too many cases, visit eating-houses where liquor is served."

The Movies and the Law

The Ohio statute explicitly declares that no person under 17 years of age or apparently under that age shall be admitted unattended by an adult to a moving picture house. And what are the facts? Fourteen managers, consulted by our investigator, calmly calculated that 40 per cent of the patrons are males above 17, 35 per cent females above that age, 25 per cent children under 17, and 12½ of the total attendance is composed of unattended children under 17. Some of the managers stated that this condition is due to the laxity of the parents and the police; they took none of the blame to themselves.

Moving Pictures and Morality

But more important than the number of unattended children entering the theater is the question of what they see after they have entered. Altho the National Board of Censors decided more than a year ago not to permit a picture displaying a nude female, possibly the members meant only nude living figures; for our investigator found that statues of nude women served the purpose of the display just as well. And, again, as to whether a wisp of hay around the waist, or a woman's long hair brought partly around over the front of the body—*à la* sea nymph—obviates all danger of the ruling against nudeness, is indeed problematic. Certainly some of the productions introducing Salome or the daughter of this or that unabashed god show most surprising interpretations of the word "nude."

Are some of the American producers of motion pictures afraid that people will not come unless naked women are revealed? The investigator marveled that the National Board passed several of the pictures he viewed, and declared, "It is evident that there is a leak somewhere which the creation of a Federal Board of Censors might remedy." Whether or not all the plots displayed on the screens are good for grown-up souls, this investigator asked doubtingly in his report whether any producer would defend the seeing by children of such pictures as "Salome," "Damaged Goods," "Neptune's Daughter," and "A Romance of the Underworld." The main trouble with so many films ostensibly warring against social vice is that they contain so much portrayal of the vice itself and portray it with such lingering detail that the spectacles, instead of making immorality disgusting, defeat their avowed purpose by arousing either morbid curiosity or downright passion. A little more attention on the part of the public to the *spirit* of the

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law would help the manager to remember that there is such a thing.

The Pictures and the School Children

A large number of motion-pictures are in use for purely educational purposes in the public schools, but if they must compete with the fervid, lurid productions seen by children in the theaters during the same week we may well doubt their efficacy. A survey of 500 children in one Toledo schoolhouse revealed the fact that 58 per cent went regularly to the motion pictures on Saturday and Sunday; while in another building, where many kindergarten children were taught, only 5 per cent did *not* attend. A man, considered a leading authority in the picture industry of the city, stated to the investigator that two-thirds of the daily attendance consisted of minors between the ages of 10 and 20.

Some interesting side-lights were brought forth by this brief school survey. Of 175 children in the first three grades 88 preferred comedy, and 45 wanted "a fight." Of 225 in the grades from the fourth to the eighth, 88 wanted broad comedy, 64 desired a thrill, and 26 loved "a fight." These statements may prove valuable to producers who are seeking the best ways of improving the American child's ideas of life. This very point—the impressing of false ideas and ideals of life and love thru the cinema—is one of the dangers named by the teachers making the survey. Then, too, must be noted the additional menace—ever-present, anyway, in city life—of over-stimulation, unwholesome craving for excitement, weakening of morals, loss of sleep, eye-strain, and a fifty per cent average of children under fifteen walking the streets unattended.

A similar survey of school children in Providence, R. I., revealed similar facts. Of 2,364 students in the grades from the fifth to the eighth, only 156 stated that they did not attend the movies, while 735 preferred Western cowboy and Indian fights, and 364 desired broad comedy. There was indeed a rather weighty preference for scenes of carousal, gambling, and killing, and the reasons given were frank if not reassuring: "They are exciting and I forget everything;" "I like to go to see them because then I can go out and rehearse what I've seen;" "I like Western pictures best because they make boys run away out West to become cowboys;" "I like pictures that show a fellow with three children on his hands because another fellow has come along and taken his wife away."

The Cleveland Foundation Committee in its survey of the schools discovered that 78 per cent of the boys and 84 per cent of the girls in the elementary schools of the city were regular visitors to picture houses, and that 80 per cent of the boys and 91 per cent of the girls in the High Schools "had the habit."

Such surveys and statistics should prove that a type of amusement attracting so large a percentage of minors ought to be under careful surveillance. It is not, in this regard, in the same class as the so-called legitimate drama, patronized by a much smaller percentage of children. In Toledo alone the motion picture houses are largely molding the tastes of nearly 50,000 children, and yet the investigator found that "50 per cent of the cases for investigation before the Juvenile Court of Toledo are due to the influence of the movies."

Potential Values

What potential values, what enviable advantages for good now rest in the moving-picture theaters—accessibility, convenience of hours, the providing of low-priced and genuinely interesting forms of entertainment, the supplying of information on travel, history, and current events, the power to improve the public taste for art, architecture, music, furniture, dress, manners, etc., the ability to impress high ideals of love, sex relations, marriage, business transactions, life itself, the counteracting of the influences of saloons, brothels, low dance halls, and gambling dens! We must have relaxation; the man who never plays is a menace to society, for some day he may run amuck.

But let the producer and the manager face these questions squarely, before the outraged opinion of the better classes of the public compels them to answer: Are they consciously endeavoring to add to the uplift of this nation? Are they using as little appeal as possible to the morbid, the subtly suggestive, the sexually exciting? Are they giving as few scenes from the underworld as interesting plots will permit? Are they using the seduction theme as little as possible? Are they portraying as seldom

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as possible scenes in which unmarried girls confess that they are approaching motherhood? Are they using as few times as they may pictures of practically naked women? Would they allow their own children to see all the pictures they permit, or even encourage, other people's children to see?

Even when many of the producers select good novels or history for their films, these productions are often viciously distorted. With the erroneous notion that the public will accept only the "sugar-coated ending," these picture-makers ruin the close of masterly tragedies with sickly love scenes and live-happily-ever-afterwards denouements. The perverting of the plot of *Salammbo*, for example, so that the heroine may get her lover is a crime against truth.

Many people, especially children, are visual-minded; they remember mainly what they *see* and not what they *hear* or *read*. If a vast number of the films are based on appeals to sensations, unhealthy sentimentalism, portrayal of violence and animalistic passion, it is a sad type of mental and moral molding the public is permitting. Any form of amusement creating exaggerated views of life, morbid curiosity, false conceptions of sin and its results, the desire to see frequently feminine nudeness, false notions of sudden courtships and runaway marriages, flabby sentimentality, loose ethics—in short, *the false delineation of American ideals*, is a type needing to be brought sharply to its senses.

Whose Fault Is It?

The producer raises the antiquated cry of the saloon keeper: "We give the public what it wants." In the last decade, however, the liquor dealer has found, to his sorrow, that he had badly misinterpreted the people's wants, and to-day he is in danger of annihilation. *Current Opinion* of March, 1917, speaking on motion pictures, pronounced these indictments on the producer, the press, and the public: (1) the dishonest superlatives of the advertising; (2) the inadequacy of the published criticisms of the photoplays; (3) the supine and uncritical public acceptance of purely commercial scripts. In a way it all comes back to our *newspapers*. We need a few journals that will announce some morning: "Such and Such was the most unnecessary display of the nude we have ever seen"; "This and That was the most viciously suggestive film ever shown in this city." Would there be libel suits or withdrawal of advertising? Not at all. The producers are not anxious to arouse the critical faculty of the public.

There are other remedies that might serve as hints to producers who doubt the moral standards of the American public. The innumerable Parent-Teachers' Associations might inspect pictures before allowing children to attend. A local Committee of Better Films for Young People, suggested by our investigator, might aid greatly by inserting in the daily papers a list of plays clean enough for the young. The creation of a Public Morals Department as a definite part of city government might encourage managers who want to present non-suggestive pictures. The boycotting by women's clubs of such theaters as persist in displaying reels of low type might penetrate the thick consciences of other kinds of managers. A law forbidding children to be in the theaters after nine o'clock at night, and the enforcement of the law denying entrance to unaccompanied children under seventeen would be welcome shocks to citizens who believe that laws are made to be enforced.

And if all these fail, there is always the possibility of placing motion pictures for entertainment purposes in schoolhouses and churches, or, better still, the erection of a Children's Theater. That absolutely clean plays can be obtained is proved by the fact that each week the Toledo Art Museum presents high-class films to 1,500 hundred enthusiastic youngsters.

This is a matter vitally affecting the mental, the moral, and even the physical health of the next generation of Americans. Conditions are about as bad as the better-thinking public will stand; the signs are for an early rebellion. If the producers and the managers of moving pictures in the United States wish to avoid drastic laws and rigorous supervision, they should begin immediately to clean house.

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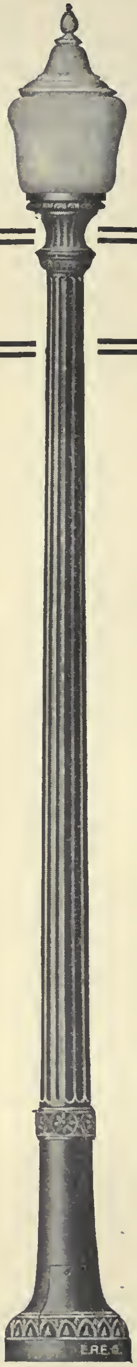

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Municipal Ice Plant Melts Away

The Missouri Supreme Court recently upset a plan of the city of Kansas City for the establishment of a municipal ice plant designed "for the manufacture and distribution of ice to the different departments of the city, and for the manufacture, sale and distribution of ice to the inhabitants of the city." (State ex rel. Kansas City vs. Orear, 210 Southwestern Reporter, 392.)

The Court holds that under the laws of Missouri a municipality cannot engage in the business of operating an ice plant unless so specially authorized by its charter, and that the charter cannot validly confer such authority without an amendment of the state constitution.

After referring to a clause of the Missouri constitution which limits the power of taxation to "public purposes only," the Court says, in part:

"The rule to be invoked in determining whether the business in question—when it is proposed by the municipality to engage in the sale of the enumerated necessities of life—is public or private, is whether such business is sanctioned by time and the acquiescence of the people as being public or private. The twilight zone is apparent and to an extent perplexing.

"Ice has but recently been elevated—granting for argument's sake the promotion—to a place among the necessities of life. Time was but recently when it was considered as a luxury only. But be this as it may, it is yet certainly no greater a necessity to the human race than are food and clothing. If a city should undertake, absent compelling necessity at least, to establish and operate grocery stores and clothing 'emporiums,' no one would hesitate to say that no power exists in the municipality to use public money, or the proceeds of public taxation, for such purposes. Such things may be given away by the city to paupers and to the temporarily unfortunate, but the city cannot enter into the business of selling such articles to all inhabitants of such city who may desire to buy. If the cities, towns and villages of this state deem that their entry into private business in competition with individuals now engaged in such business is a matter of public expediency, then the initial effort to this end must be an amendment to the Constitution; and following such an amendment the passage of an act changing the common law, which, even without the aid of the constitutional inhibition, forbids the levying and collecting of taxes for any private purpose or business. * * * If the situation were one of continuing, or perennial, necessity, a city might well have the power under the general welfare clause of its charter to take such steps as would be requisite to supply the compelling need for any such necessity of life so long as such condition existed. But this, as stated above, is not the question before us.

"While a reference to the holdings in other jurisdictions, which we analyze and discuss below, discloses some contrariety of opinion, we are constrained to rule that our own Constitution and our own trend of judicial opinion, touching what is a public purpose for which public money may be used, place us among the great majority of jurisdictions holding, in similar or analogous cases, that the proposed purpose is not a public purpose.

"The question whether a city or town can engage in the making and selling of ice as a business has, as forecast, never before been up for decision in the courts of this state. It was before the Supreme Court of Georgia in the case of Holton vs. City of Camilla, * * * wherein it was ruled that, under an express statute conferring upon the city of Camilla the power to erect and operate an ice factory, such city could exercise this power as an incident to the operation of a lighting plant already existing.

"Likewise, the Supreme Judicial Court of Maine, in the case of Laughlin vs. City of Portland, * * * held that, pursuant to an act of the Maine Legislature expressly authorizing cities to establish fuel yards for the sale of fuel at cost to the inhabitants of such city, the city of Portland could establish such a fuel yard, and that, present the exigency of necessity, such use of the money is a public use.

"But in the case of Union Ice Co. vs. Ruston, 135 La., 898, * * * it was held that even an express provision in the charter of a town permitting such town to engage in the business of making and selling ice to the inhabitants thereof did not and could not save such business from being ultra vires, because violative of the Constitution of Louisiana, which provides, substantially as does our own, that the

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taxing power may be exercised by municipal corporations for purposes strictly public in their nature.

"In the case of Keen vs. Mayor of Waycross, 101 Ga. 588, 29 S. E. 42, it was held that a city or town cannot engage in the plumbing business, or in the business of selling plumbers' supplies to its citizens, even tho such business be ancillary to, and deemed necessary for, the successful operation of the municipal waterworks system.

"In the case of State ex rel. vs. Lynch, * * * it was held by the Supreme Court of Ohio that an ordinance passed by the city of Toledo appropriating public money for the establishment and operation of a moving picture show was invalid, because it was an unauthorized use of public money.

"In the case of Radford vs. Clark, * * * it was held by the Supreme Court of Appeals of Virginia that in the absence of statutory authority a municipal corporation of that state had no power to operate a stone quarry, and that such a power did not inherently flow as a necessary concomitant to the city's duty to keep its streets in repair.

"In an opinion furnished to a branch of the Massachusetts Legislature by the Supreme Judicial Court of Massachusetts upon the query whether a proposed act, whereby it was sought to authorize cities and towns to buy and sell fuel, was valid, it was said:

> "'Cities and towns now have ample power to provide in any reasonable way for paupers, whether it be by furnishing out-of-door relief, or by support in almshouses, and whether their need of relief is permanent or caused by a temporary condition. It is equally true that the second of these consequences does not justify taxation of those who do not have occasion to buy coal for the benefit of those who do. The use of the money of taxpayers for such a purpose would not be a public use, but a use for the special pecuniary benefit of those who happen to be affected by the state of the coal market.'" Re Municipal Plants, 182 Mass., 609.

Regulation of Surface Closets

A section of the North Carolina statutes empowers municipalities "summarily to remove, abate, or remedy, or cause to be removed, abated, or remedied, everything in the city limits, or within a mile of said limits, which is dangerous or prejudicial to the public health; and the expense of such action shall be paid by the person in default, and, if not paid, shall be a lien upon the land where the trouble arose, and shall be collected as taxes." Pursuant to this authority, the aldermen of defendant city adopted an ordinance, providing that surface closets or privies in the city used in connection with a dwelling shall be cleaned and inspected under the supervision of the city. A charge of 30 cents a month was levied to cover the cost of cleaning and inspection of each closet, payable to the tax collector the first of each month, covering the preceding month. A 50 per cent penalty is prescribed for nonpayment of the charge. The assessment is declared to be a lien against the property, collectible in the manner provided for the collection of municipal taxes.

The validity of the ordinance has been sustained by the North Carolina Supreme Court in the case of Ratchford vs. City of Gastonia, 99 Southeastern Reporter, 21. The Court says:

> "The public health is a matter of importance to the entire neighborhood, and especially to all the inhabitants of a town or city, for the indifference or ignorance or neglect of one man will nullify the precautions taken by all others in that locality. Such ordinance as is here in question is a necessary protection, which will be extended in its scope with the increase of knowledge and can never be diminished. The requirement of sewerage will be better than such ordinance as this, which is the minimum."

Expired Street Railway Franchises

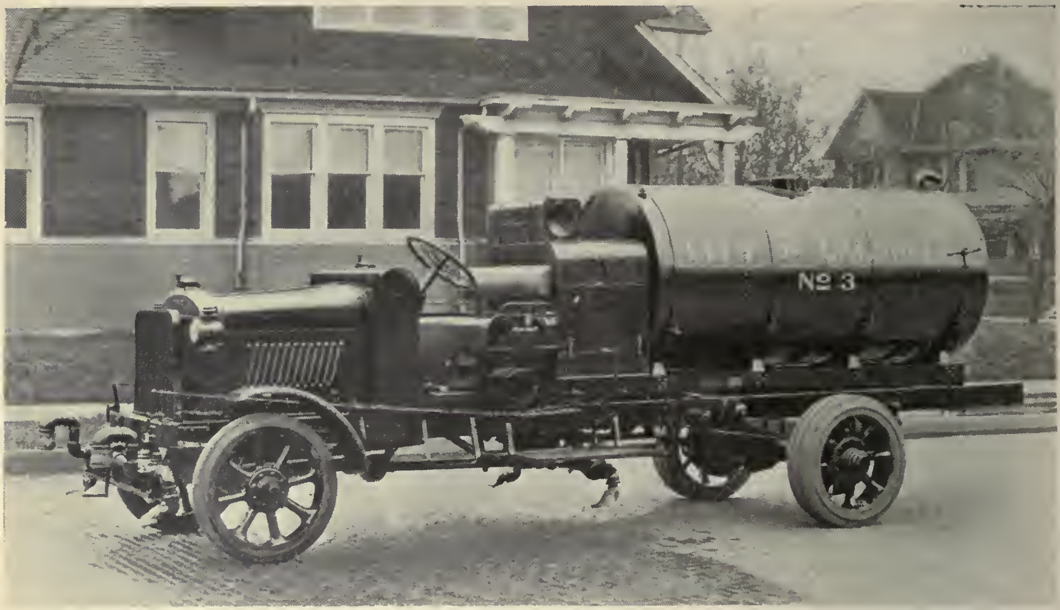
On expiration of a street railway franchise a city may require removal of the tracks from the streets, but cannot require continued service on terms not yielding a reasonable return on the company's investment. (United States Supreme Court, Detroit United Railway Co. vs. City of Detroit, 39 Supreme Court Reporter, 151.)

Municipal Pound as Nuisance

A municipality is liable in damages for establishing a hog pound within twelve feet of a residence against the protest of the owner of such residence, and for discomfort caused by permitting a dead hog to remain unburied in the pound. (Mississippi Supreme Court, Crawford vs. Town of D'Lo, 80 Southern Reporter, 377.)

Municipal Tax Exemptions

The legislature of a state may constitutionally empower cities to encourage the establishment of factories within their limits by granting exemption from taxation for certain periods. But a statute authorizing exemption in favor of factories to be established in the future does not empower a city to grant exemption in favor of a factory already established, even tho the owner consent to inclusion of his property within an extension of the city limits in consideration of such exemption. (Mississippi Supreme Court, Robertson vs. Southern Paper Co., 80 Southern Reporter, 384.)



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Sewer Assessment Proceedings

A letter written by the owner of a tract of platted land to a city, stating that the owner approved plan for construction of a sewer serving the property and would consent to usual assessment, amounted to an admission that the fair cost of the sewer would not exceed the benefits accruing to the property, thereby precluding him from taking a different position on construction of the improvement. But the letter does not preclude his attack upon the fairness of an assessment levied against a particular lot, altho it does prevent him from complaining of the assessment on the mere ground that the assessment exceeds 25 per cent of the value of lots; the value being more or less speculative. (Iowa Supreme Court, North View Land Co. vs. City of Cedar Rapids, 169 Northwestern Reporter, 644.)

Unauthorized Bonds Void

A city can issue bonds only as expressly authorized by statute, and bonds not so authorized are void. (New York Supreme Court, Schieffelin vs. Hylan, 174 New York Supplement, 506.)

Suits on Contractors' Bonds

Under a bond given by a paving contractor to a city, binding him to pay "all indebtedness incurred" for labor and material incident to performance of his contract, and specifying that material men might sue on the bond, material men furnishing materials to a subcontractor are protected, regardless of whether the principal contractor had notice of the purchase of such materials. (Texas Court of Civil Appeals, Fennell vs. Trinity Portland Cement Co., 209 Southwestern Reporter, 796.)

Municipal Fire Regulations

In an opinion handed down by the Minnesota Supreme Court in the case of Commercial Club of St. James vs. Chicago, St. Paul, Minneapolis & Omaha Railway Co. (171 Northwestern Reporter, 312), upholding an order of the State Railroad and Warehouse Commission requiring defendant railway company to construct a new depot, the Court uses the following language concerning the proper interpretation to be put upon the common ordinance provision that no wooden building within the established fire limits of a city shall be "raised, repaired or enlarged":

> "Taking the section as a whole, we think the ordinance may properly be construed as permitting the ordinary repairs such as reshingling, replacing a board as it becomes decayed, painting and general up-keep of wooden buildings within the fire limits; but prohibiting enlarging such structures by either extending or raising them or making changes which are not properly repairs. The spirit and meaning of the section may be derived from the clauses therein restricting repairs when these are called for by fire damage to cases where the injury to the structure was less than 50 per cent."

In this case the railway company unsuccessfully asserted a right to remodel a wooden depot which had seen forty years' service.

Eliminating Street Obstructions

A city is entitled to maintain suit to enjoin an abutting property owner from maintaining platform weighing scales in a street in such position as to constitute a nuisance by damming drainage or obstructing traffic. (Iowa Supreme Court, Polk City vs. Gemricher, 170 Northwestern Reporter, 378.)

Injury During Public Celebration

That the officers of a city took no steps to prevent discharge of firecrackers during a Fourth of July celebration created no liability against the municipal corporation for injury resulting to a child who was injured by a firecracker while he was sitting on a sidewalk, watching a parade. (Iowa Supreme Court, Remy vs. City of Shenandoah, 169 Northwestern Reporter, 737.)

Pennsylvania Workmen's Compensation Act

The Pennsylvania Workmen's Compensation Act entitled the dependent relatives of a boro policeman to an award on account of his being fatally injured in the execution of his duty in arresting a criminal. (Pennsylvania Supreme Court, 10 Municipal Law Reporter, 161.)

Creating Sinking Funds

A statute requiring municipalities to provide sinking funds for the payment of their bonds has no application to debts evidenced in the form of warrants. (Texas Court of Civil Appeals, American Road Machinery Co. vs. City of Ballinger, 210 Southwestern Reporter, 265.)

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Probably we can refer you to some city from whose engineers you can gain an unprejudiced report.

Engineering data upon request.

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A Substitute for the Saloon

By Dr. Frank Crane

WHEN the saloon goes, what shall we have in place of it?

To answer the question intelligently, we must consider what the saloon has meant, what human need it supplied.

1. It meant intoxication, more or less. By alcohol men escape from themselves They find in it a way out of the horror of the humdrum, out of their worries. There is no substitute for alcohol which is not worse than alcohol. Men will simply have to get along without poisoning themselves into a deceptive contentment.

2. It meant democracy. Rich and poor met on a level.

3. It meant a comfort station. The absence of suitable comfort stations is a serious defect in American cities, and one that every community should remedy at once.

4. It was a domestic "city of refuge." It was a place for the man to go who did not want to go home.

5. It supplied that true communion of human beings that comes only from eating and drinking together.

6. It wasn't respectable. It was a bit off color. It had enough flavor of devilishness in it to make it attractive. Beer is not as good as ice cream soda, but it's wickeder, which more than compensates.

The substitute must cover these points.

The first point suggests no substitute. When alcohol is removed it leaves a hole—nothing can fill it. But it is like taking a splinter out of a wound; by and by, if a man is healthy, the sore spot will heal.

The substitute must not be "better" than the people who are supposed to patronize it. There must be no "uplift" business to it. It must be clean of any purpose to "do the men good," to "elevate the poorer classes," or to do any such thing. People do not want to be "improved." They want a place for self-expression, a place to be bad if they choose.

The substitute must pay for itself. If there is any "charity" about it, if it is endowed or supported by benevolence, it is dead from the beginning.

It must be a place where any man with a nickel can go in, have a good time, and feel that he is helping support the concern.

It must not be a place where men are "urged" to go. If they are urged they will not go. It is human nature. Preferably it should be not altogether approved by the moralists. It should be as "tough" as its neighborhood.

It must be run by private enterprise, and pay well enough to attract an efficient manager. If the city runs it, or a church, or some benevolent society, it will fail. It must arise from a real need of the people themselves.

It must have a free comfort station. Some kind of a free lunch also would help. There should be opportunities for card-playing and billiards.

There should be an expert barkeeper who gets part of the profits.

There is no reason why a place of this sort should not thrive, as it would have no license to pay and no graft to dispense to the ward boss.

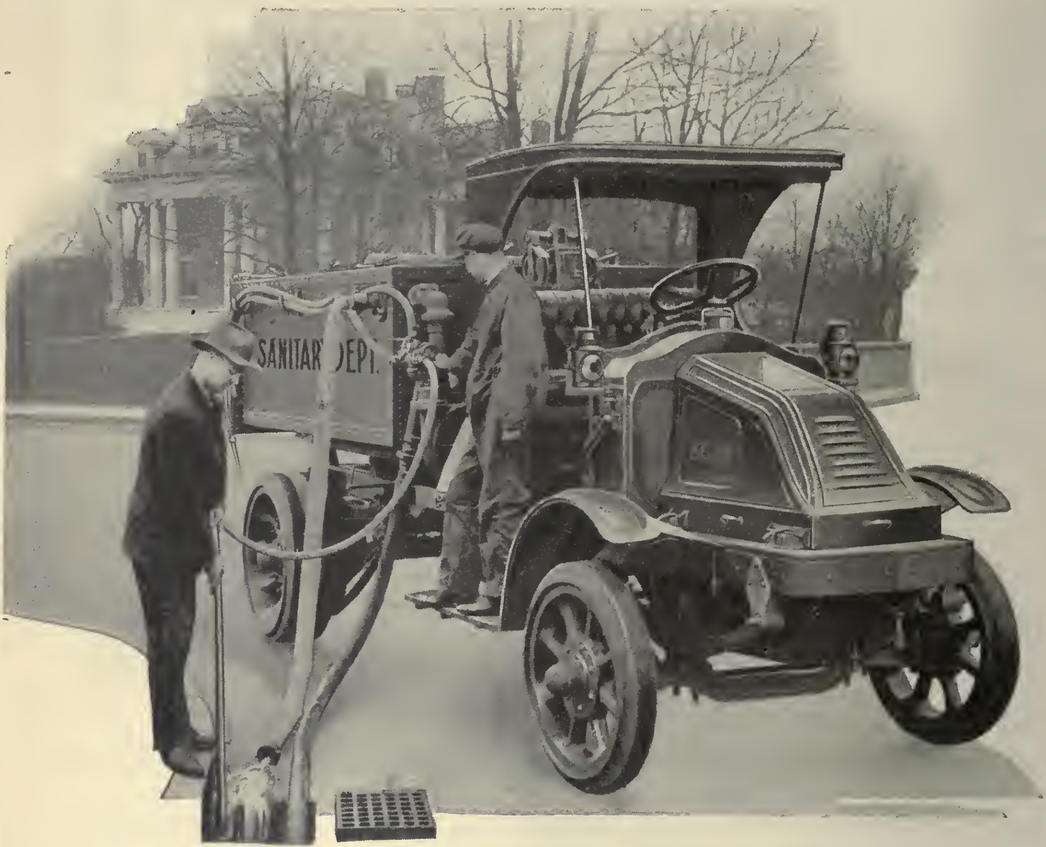
All this may seem rather low along the ground. Perhaps it is. But there's where folks live, the kind of folks that go to saloons, and if you want them you must go where they are; they will not come to you.

And this is the kind of substitute that will *grow* up to meet the need. And any kind you attempt to devise and hand down to the ex-saloon crowd will most certainly fail.

In course of time, as habits of sobriety become established and a new generation arises free from the taint of alcoholic craving, the substitute will improve.

But the only way to get anywhere is to start from where you are now.

(*Copyright*, 1919, *by Frank Crane*)



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The "SECO" Portable Pumping Apparatus cleans sewers and catch basins at a saving of 50 to 90% over the old way.

This apparatus is mounted on a special

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News and Ideas for Commercial and Civic Organizations

Efficient Tree Planting

Albuquerque, N. Mex. — The Albuquerque Chamber of Commerce concluded a tree planting campaign in May which offers valuable suggestions to other commercial organizations. The first step was to appoint a committee of private citizens experienced in tree planting. This committee drew up a set of specifications embodying the consensus of their opinions as to the best species of trees to plant and when, the best size of stock, and the exact methods of shipment, storage, distribution, planting, and the after care which is necessary to produce the best results under the conditions existing in Albuquerque. The specifications were then published in the local newspapers, and private parties were asked to submit bids, giving the cost per tree for which they would agree to meet the specifications. On a given date all bids were reviewed by the committee, and those bidders whose prices were reasonable were investigated as to their personal reliability and experience and the reliability of the nursery with which they did business. Certificates of recommendation were then issued to all the bidders who, in the opinion of the committee, were fully qualified to do the work.

The committee then appointed a trained forester as inspector. The certificates of recommendation stipulated that any work not complying with the specifications as interpreted by the inspector would result in the forfeiture of the certificate of recommendation. All holders of certificates were then encouraged to proceed to solicit business in the regular manner of private contractors.

These certified contractors commanded the confidence of the public and were aided by an extensive advertising campaign This was conducted by the Chamber of Commerce with the full coöperation of the local newspapers. Large numbers of trees were ordered by property owners who had in former years deferred tree planting because they were not satisfied with the service rendered by unregulated contractors. A total of over one thousand trees were planted, and so far 95 per cent of them are growing and doing well. Under the extremely difficult conditions obtaining in the Southwest, this is a very exceptional showing. The public is well satisfied. The annual planting of trees will be at least trebled, and the contractors state that they will never work under any other system.

ALDO LEOPOLD,
Secretary, Albuquerque Chamber of Commerce.

A War Veterans' Club and Employment Bureau

Phœnix, Ariz.—The Phœnix Chamber of Commerce is solving the social and employment problems of many of Arizona's returned soldiers, sailors and marines in a manner which is proving very satisfactory. It occurred to the Chamber of Commerce to unite these veterans of the Great War in a temporary organization that could finally be merged into whatever national organization of those veterans might later be developed. Some sort of headquarters was essential. These were established in an abandoned schoolhouse, which during the war was the home of several welfare organizations whose decreasing activity after the signing of the armistice left a number of the rooms vacant. At the request of the Chamber of Commerce, public-spirited citizens immediately donated sufficient furniture, books and musical instruments to furnish two large rooms in this school building.

The organization was formed and is known as the Great War Veterans' Association of Arizona. One of the returned soldiers acts as secretary, and another one is manager of the Employment Bureau, which is one of the principal features of the organization. Any returned soldier, sailor or marine is welcome at the club headquarters.

The association has its own sleeping

Experience—the Greatest Builder

Honest manufacturing methods and carefully selected materials, alone will not make road-building machinery. It takes experience — experience in dealing with the most widely diversified problems. Experience that has proven what part or parts are subjected to the greatest strain.

The best materials and nearly a half-century of experience is the combination that has made Austin Western Machinery famous the world over as a "Super-Dependable" line.

The following Austin Western machines are giving profitable service in practically all parts of the world.

- **Road Graders**
- **Rock Crushers**
- **Road Rollers**
- **Portable Store Bins**
- **Stone Elevators**
- **Stone Screens**
- **Stone Spreaders**
- **Elevating Graders**
- **Blade Graders**
- **Dump Wagons**
- **Street Sprinklers**
- **Street Sweepers**
- **Motor Tandem Rollers**
- **Motor Macadam Rollers**

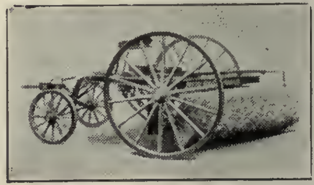
During the War the United States and Allied Governments purchased

Over 700 Austin Motor Rollers

More than ten times their combined purchases of all other rollers,

And at Higher Prices

WHY?



Our catalogue No. 18 which describes almost 250 sizes and styles of the above equipment, will be sent on request.

The Austin Western Road Machinery Co.

CHICAGO

Branch Offices in

NEW YORK CITY
SAN FRANCISCO, CAL.
JACKSON, MISS.
BOSTON, MASS.
COLUMBUS, O.
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MEMPHIS, TENN.
ST. PAUL, MINN.
OKLAHOMA CITY, OKLA.
DALLAS, TEX.
RICHMOND, VA.
PORTLAND, ORE.
ATLANTA, GA.

CLUB ROOM PROVIDED BY THE PHOENIX, ARIZ., CHAMBER OF COMMERCE FOR RETURNED SOLDIERS, SAILORS AND MARINES

quarters. These are located in a temporary hospital building containing fourteen beds, which was rented by the county for the accommodation of any soldiers or sailors who might be passing thru the city. Arrangements were also made with the Y. M. C. A. to provide beds in its building for men visiting the city who have no other places in which to stay.

The association is constantly making an industrial survey of the city in an effort to discover where positions may be found, with the result that many of the men are securing employment who would otherwise have found it difficult to do so. As many as fourteen men have been placed thru the Employment Bureau in one day.

The future of this temporary organization is uncertain, of course, but it is filling a peculiar need, and those who have participated in the movement feel that it has been well worth while.

HARRY WELCH,
Secretary, Phœnix Chamber of Commerce.

Civic Advertising on City Lighting Standards

COLUMBUS, OHIO.—A unique method of publicity for a chamber of commerce campaign was used in the reorganization of the Chamber of Commerce of Columbus last month. The Chamber of Commerce has secured from the city the right to place advertising signs for civic purposes on the ornamental street lighting standards. The illustration on page 83 shows the appearance of these signs. During the campaign the first of the series was as shown in the illustration, "Columbus in 1920—Think." The signs were changed from day to day, and the slogans used included the following:

Give a Thought to Columbus. Join the Chamber of Commerce.

Now for the New Day! Help Columbus Get Ready. Join the Chamber of Commerce.

Columbus Discovered America. Help Discover a Greater Columbus. Join the Chamber of Commerce.

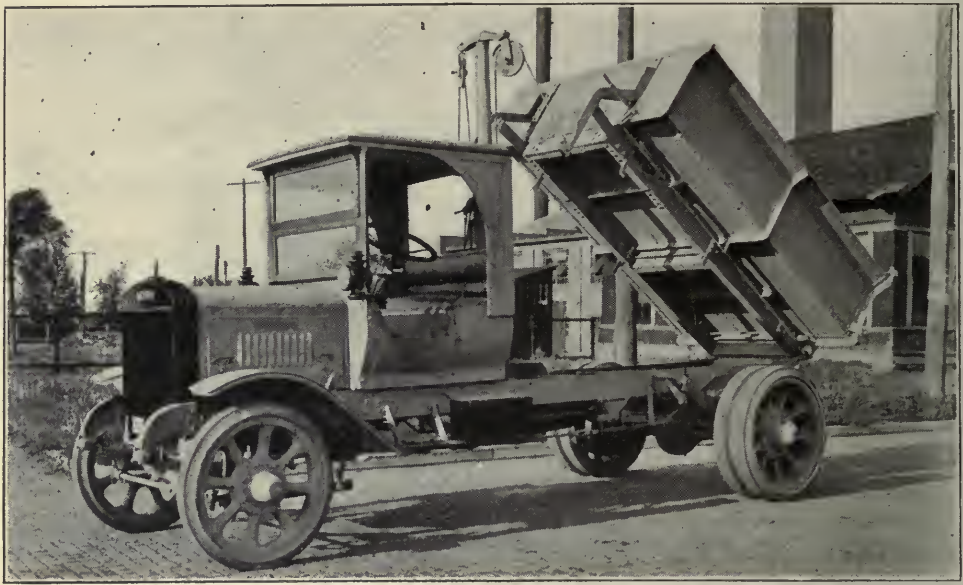
Your City Makes or Unmakes Your Job. Join the Chamber of Commerce.

300,000 People Drifting to 1920. Don't Drift. Join the Chamber of Commerce.

Rotary says: He Profits Most Who Serves Best. Join the Chamber of Commerce.

Exchange Club says: Let's Join the Chamber of Commerce and Work Together for Our Town.

Y. B. M. C. says: Young Business Men—The Future is Yours. Join the Chamber of Commerce.



Five ton, Model L, Indiana, equipped with special Hydraulic dump body—used extensively by Municipalities, road builders and contractors everywhere.

Where Indiana Reserve Strength Counts

Into every part of the Indiana Chassis is built 112% reserve strength. That is why you can't set a limit in years upon the service you'll get from your Indiana.

Hundreds of Indianas are still in the service of cities and counties after six, seven, and eight years of hard daily work. When you put the Indiana to work, you'll soon learn, like others, that your truck cost by the year, month, week or day is markedly lower with the Indiana than with any truck of equal capacity.

$150 to $850 More Value

Comparison with the leading makes of worm drive trucks, part for part, capacity for capacity, shows that Indiana offers $150 to $850 more in value. Its heavy duty motor, over-sized bearings, 100,000 mile rear axle, gasoline saving carburetor and dependable magneto assure lowest cost of operating service.

WORM DRIVE

INDIANA TRUCKS

are used everywhere, by cities as well as counties, in construction work that has proved they have the stamina and power to stand up for years under the stress of this hard service.

Write for our "Haulage Costs Book" which gives actual figures for your miles, your loads and your capacities.

INDIANA TRUCK CORPORATION, Dept. 121, Marion, Indiana

ONE OF THE CIVIC ADVERTISING SIGNS USED DURING CHAMBER OF COMMERCE CAMPAIGN IN COLUMBUS, OHIO

Ad Men say: Capitalize the Opportunities of the Capitol City. Join the Chamber of Commerce.

Auto Club says: Join the City's Chamber of Commerce—The City's Carburetor.

Kiwanis says: 5,000 Men and Women United in a Common Cause Can Accomplish Anything for Columbus. Join the Chamber of Commerce.

N. S. Imp. Ass'n says: As Goes Columbus So Goes the North Side. Join the Chamber of Commerce.

Recently Issued Printed Matter

AKRON, OHIO.—"City Plan for Akron" is the title of the report recently prepared for the Akron Chamber of Commerce by John Nolen, city planner. This report, which is very comprehensive, can be obtained from the secretary of the Akron Chamber of Commerce for one dollar, postage prepaid.

The Akron Home Owners Investment Company has issued a statement of its plan and organization. The company is capitalized at $5,000,000, and will loan money on first and second mortgages to lot owners in Akron desiring to erect houses on their property.

ATHENS, OHIO.—The annual report of the Athens Chamber of Commerce for the year ending June 1, 1919, has been issued.

AUBURN, ME.—A leaflet entitled "Auburn Housing Proposition," published by the Auburn Chamber of Commerce, contains a full report of the Chamber's Housing Committee.

BOSTON, MASS.—A digest of the activities of the Boston Chamber of Commerce during the past year is contained in the annual reports of the committees that are published in the supplement to *Current Affairs* of May 19, 1919.

BRADFORD, PA.—"Industrial Education for Bradford" is the title of a pamphlet published by the Bradford Board of Commerce containing recommendations submitted by the State Supervisor of Industrial Education.

BROOKLYN, N. Y.—"Collection and Disposal of Municipal Waste in New York City" is the title of a report submitted by the Health and Sanitation Committee of the Brooklyn Chamber of Commerce.

CHAMPAIGN, ILL.—The "Year Book of the Activities of the Chamber of Commerce of Champaign, Ill.," containing a review to March 1, 1919, has been issued.

DALLAS, TEX.—The Dallas Property Owners' Association has issued the following bulletins: No. 1, entitled "The Dallas Property Owners' Association—What it stands for and what it hopes to accomplish;" and No. 2, entitled "The Union Station District—Its Present Condition and Its Possibilities."

FORT WAYNE, IND.—The Fort Wayne Chamber ot Commerce has issued a folder telling "Why Fort Wayne's jobbing business has grown to enormous proportions."

INDIANAPOLIS, IND.—The Indianapolis Chamber of Commerce has issued an elaborate booklet entitled "Somewhere in America there is an Economic Point," describing the commercial and industrial advantages of Indianapolis and containing several interesting colored maps.

JANESVILLE, WIS.—"Doing It The Janesville Way Through the Chamber of Commerce" is the title ot the Janesville Chamber's annual report for the year ending June 1, 1919.

JOHNSTOWN, PA.—The May issue of *Community Service*, the monthly bulletin of the Johnstown Chamber of Commerce, contains an enumeration of a few of the organization's accomplishments during 1918. It also gives the members of the Chamber's seventeen working committees.

JOLIET, ILL.—"Will County Liberty Building" is the title of the report of the Memorial Committees of the Joliet Association of Commerce and the Will County Board of Supervisors regarding the proposed memorial to the boys who enlisted from Will County.

LAWRENCE, MASS.—The June issue of the official bulletin of the Lawrence Chamber of Commerce, the *Chamber of Commerce Score*, contains the annual reports of the President and Secretary and of several committee chairmen.

MUSKOGEE, OKLA.—A brief prepared by G. A. Gesell, secretary of the Muskogee Chamber of Commerce, was presented on behalf of that organization in a movement to secure lower electric light rates for Muskogee and Fort Gibson, Okla. Copies may be obtained from the Muskogee Chamber of Commerce.

NEW CASTLE, PA.—The "Report of Activities of the Board of Trade of New Castle," for the year ending June 1, 1919, has been issued.

NIAGARA FALLS, N. Y.—"Niagara Falls, a Better City in which to Live and Do Business," is the title of the annual report of the Niagara Falls Chamber of Commerce for the year ending in March, 1919.

PHILADELPHIA, PA.—The Philadelphia Chamber of Commerce has issued its 1918-'19 year book, a large volume covering the industries in Philadelphia and the surrounding manufacturing territory.

PLAINVIEW, TEX.—The Board of City Development of Plainview, Tex., has issued an illustrated booklet entitled "Introducing to You The Plainview Country, the Land of Opportunity."

ST. LOUIS, MO.—The United Railways Committee of the St. Louis Civic League has issued a report on "Capitalization and Valuation" in relation to the local street railway situation.

SCHENECTADY, N. Y.—The Schenectady Board ot Trade has issued its annual report.

WHEELING, W. VA.—The June issue of *For Wheeling*, the monthly bulletin of the Wheeling Chamber of Commerce, contains a statement of "Accurate Facts and Figures about Wheeling."

WORCESTER, MASS.—The year book of the Worcester Chamber of Commerce has been issued.

The proceedings of the Readjustment Conference held by the National Association of Commercial Organization Secretaries, in conjunction with the annual meeting of the Chamber of Commerce of the United States in St. Louis on May 1, 1919, have been published.

"Effective Community Advertising" is the title of a paper presented by Don E. Mowry, General Secretary of the Madison, Wis., Association of Commerce, at the annual meeting of the Wisconsin Association of Commercial Secretaries, held at La Crosse, Wis., June 11, 1919.

Write us. We will gladly advise with you and co-operate in campaigns to fight the rat.

All City and Community Officials

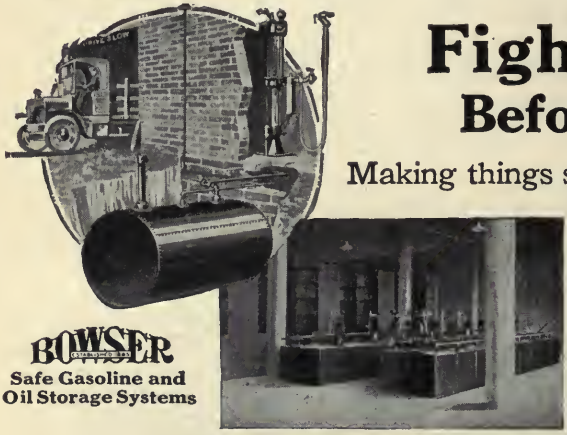
should interest themselves in campaigns to fight the great rat waste—which probably aggregates half a billion dollars annually in the United States. It is a duty. Write us for suggestions. We would like to co-operate.

Rat Bis-Kit

No Mixing—No Spreading—No Muss—No Trouble—is the already prepared rat and mouse exterminator. Each Bis-Kit contains a different bait. Rats and Mice eager for it. Safely packed in paraffined paper and carton. All Druggists have it in two sizes (25c. and 35c.) or we will quote special bulk prices direct to municipalities. Investigate. Write us.

THE RAT BISCUIT CO.
Springfield, Ohio

Kill roaches, etc., with Rat-Bis-Kit Paste. In tubes 25c.



BOWSER
Safe Gasoline and Oil Storage Systems

Fighting Fire
Before It Starts

Making things safe — fire prevention, is the cheapest and best method of fighting fire.

Many of the fires that occur each year, could have been prevented by proper precaution.

Storing Gasoline and Oil Safely

decreases the fire hazard wherever these liquids are handled. Bowser Storage Systems store oils in leak and evaporation proof steel tanks, pump them out with approved self-measuring pumps—make the oil storage safe from fire and explosion.

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Changes Among the Secretaries

A list of the recent changes and new appointments occurring among the secretaries of commercial and civic organizations thruout the United States.

Readers are asked to notify the Editors of such changes as soon as they occur, in order that the list may be made as complete as possible each month.

E. M. Ackerman has resigned as secretary-manager of the Boyne City, Mich., Chamber of Commerce, to accept a position as Purchasing Agent of the Traction Engine Company, of Boyne City.

P. H. Appleby has resigned the secretaryship of the Commercial Club of Sac City, Ia.

L. V. Armentrout has resigned as secretary-manager of the Frankfort, Ky., Chamber of Commerce, to open a branch office for the *Louisville Courier Journal and Times* at Frankfort.

John Bloomer has been elected secretary of the Elwood, Ind., Chamber of Commerce, succeeding L. E. Reeves. Mr. Bloomer was formerly associated with the Service Motor Truck Company, at Wabash, Ind.

C. W. Bower has been elected secretary of the Trumansburg, N. Y., Chamber of Commerce.

Garland S. Brickey has resigned as general manager of the Beaumont, Tex., Chamber of Commerce, to become general manager of the Houston, Tex., Chamber of Commerce, succeeding James Z. George.

William M. Clemens has tendered his resignation as secretary of the Mobile, Ala., Chamber of Commerce and Business League.

J. Buckner Debnam has been elected secretary of the Chamber of Commerce at Fredericksburg, Va.

Benjamin C. Eastin has resigned the secretaryship of the Commercial Club at Mena, Ark., to accept a similar position at Henryette, Okla. He is succeeded at Mena by Claude H. Williford.

C. T. Farnham has been chosen as the new secretary of the Martinez, Cal., Chamber of Commerce. Mr. Farnham was formerly associated with the Sacramento Home Products League.

Lieut. Ralph L. Gorman, of the 138th U. S. Infantry, has been appointed assistant secretary of the Chamber of Commerce of El Dorado, Kans.

Harry F. Greby is the new secretary of the Hazleton, Pa., Chamber of Commerce, succeeding Walter W. Schultz. Mr. Greby was formerly principal of the Central Grammar School of Hazleton.

Prof. R. F. Holloway has been chosen as the new secretary of the Chamber of Commerce at Comanche, Tex.

L. E. Iliff is the new secretary of the Richmond, Ind., Commercial Club.

Major Henri K. Jordan, M. C., has been elected secretary of the Chamber of Commerce at Brantford, Ont.

Herbert F. McDougal, formerly secretary of the Cedar Falls, Ia., Commercial Club, has resigned that position to become manager of The Pershing Way, a proposition combining an automobile trail and a community association extending from Winnipeg to New Orleans. He is succeeded at Cedar Falls by H. W. Raymond, formerly secretary of the Iowa City Commercial Club.

Louis G. Monroe has been elected secretary of the Fredonia, N. Y., Chamber of Commerce.

W. H. Moore has been appointed secretary of the Crowley, La., Chamber of Commerce.

Lieut. W. B. Morey, formerly secretary of the Chamber of Commerce at Tyrone, Pa., has been elected secretary of the Butler, Pa., Chamber of Commerce, succeeding Rawley W. Holcombe.

M. J. Norrell has resigned the secretaryship of the Comanche, Tex., Chamber of Commerce, to accept a position with the District War Savings Headquarters at Dallas.

H. W. Phenicie, of Manchester, Ia., has been elected secretary of the Nowata, Okla., Chamber of Commerce.

L. J. Salter, of Barrie, Ont., has been elected secretary of the newly-organized Chamber of Commerce at Stratford, Ont.

William A. Searle has been elected secretary-manager of the Chamber of Commerce at Camden, N. J.

R. I. Stewart is the new secretary of the Commercial Club at Manson, Ia.

George W. Thomas has resigned the secretaryship of the Shreveport, La., Chamber of Commerce, to engage in private business in Shreveport.

Ralph E. Thomas is the new secretary of the Chamber of Commerce at Peabody, Mass.

Rev. J. P. Thiel has resigned the secretaryship of the Hastings, Nebr., Chamber of Commerce.

O. V. Vernon has accepted the secretaryship of the Childress, Tex., Chamber of Commerce. Mr. Vernon was formerly County School Superintendent.

C. Cyrus Wall, of Russellville, Ky., has been elected secretary-manager of the Frankfort, Ky., Chamber of Commerce.

Porter A. Whaley has resigned the secretaryship of the Wichita Falls, Tex., Chamber of Commerce, to accept the position of general manager of the West Texas Chamber of Commerce and Oil. He will be succeeded at Wichita Falls by Hubert M. Harrison, formerly connected with the *Dallas News*.

Another FEDERAL

Business Methods in City Affairs

Progressive cities and towns are rapidly applying common sense business methods to the municipal affairs.

Nine times out of ten this means the adopting of rapid and economical means of haulage by motor truck. There is really no reason why the people's money should be wasted on out-of-date equipment and methods.

Towns in all parts of the country are successfully using Federal trucks for haulage of all kinds, and are doing the work better and at a lower cost.

Write for "Traffic News," an interesting magazine of truck haulage, which will be mailed without charge.

"Shorten the miles to market—build better roads."

FEDERAL MOTOR TRUCK COMPANY
34 FEDERAL STREET DETROIT, MICH.

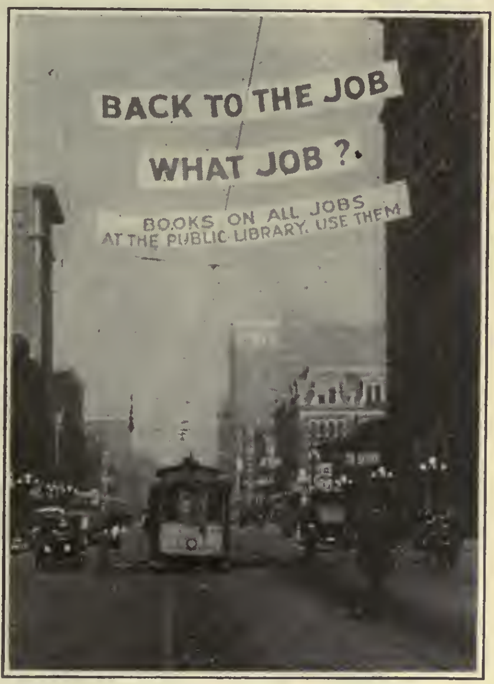
The City of Lebanon, N. H., is using this Federal to haul material for road construction and street repair, also to haul away rubbish and waste.

A Public Library Advertises Books on All Jobs

By Emily V. D. Miller

Reference Librarian, Public Library, Birmingham, Ala.

THE banner, pictured herewith, swings aloft across the busiest thorofare in Birmingham, Ala., and invites the returning soldier to make use of the newly opened Vocational Department of the Public Library. It is the most conspicuous, altho not the only, advertising feature of the campaign this Southern library is putting on to make known its resources to the men who are being reabsorbed into business and industry. Large placards, bearing the same legend as the banner, are being widely displayed in machine shops, employment offices, and store windows; and thousands of printed slips, issued by the American Library Association and calling attention to specific books on various occupations, are being distributed wherever men are being employed or seeking employment.



In addition to these methods, classified advertisements are being run in the three daily papers. These are changed daily, are short and pointed, and run like this:

"Are you a carpenter? Learn to be a better one. Books on carpentry at the Public Library. Use them free."

"Machinists, Attention! Books for you at the Public Library. Borrow them without cost, without red tape."

"Soldiers and sailors! Get back in the game. Books will help. Free at the Public Library, City Hall."

"Learn more to earn more. Books on all jobs at the Public Library. Use them. Free."

"Wouldn't it be a good thing to know all that the best experts have written about your trade? You can do it. Use the Public Library. Free."

"The Public Library spells Opportunity for you. It is a great free school. Enroll to-day. Get ahead. Read up on your job."

Progress in Wheeling Under City Manager Government

FRIENDS of clean and efficient city government in Wheeling, W. Va., recently issued a pamphlet from which the following interesting record of achievement is taken:

"Coming into office with a treasury practically empty and with unpaid outstanding orders aggregating $35,835.25, with utilities owned by the city in bad shape, much of the machinery antiquated and useless and the efficiency of the remainder sadly impaired due to lack of necessary repairs and overwork, the present city administration faced a task that looked almost hopeless.

"Its first important act was the selection of the late George O. Nagle as Wheeling's first city manager. Mr. Nagle, in accepting the responsibility, instituted a program of

SAGINAW CALCIUM CHLORIDE

Preserves Roads at least cost

Prevents dust and wear

Road in front of our factory. Material: Bayport Stone. Dark portion in foreground, Saginaw Calcium-treated and dustless; white portion, untreated.

SAGINAW CALCIUM costs less per square yard than any other road treatment including water sprinkling. It is colorless and odorless, non-corrosive and non-combustible, contains no oil or tar or sticky substance, is not poisonous and will not damage rubber, paint or horses' hoofs.

SAGINAW CALCIUM can be applied without any interruption of traffic and is a bactericide. The effect of calcium is culminative, less is required the second season than the first. It absolutely will not damage a roadway, it never produces a loose, flaky or mealy surface but incorporates itself into the surface of the road and binds it, thus preventing raveling.

SAGINAW CHEMICAL CO., South Michigan Avenue, **Saginaw, Mich.**

FWD TRUCKS

BESIDES their load carrying capacity, ease of handling, and adaptability to any kind of work, F-W-D trucks show saving in costs not equalled by trucks of ordinary types.

In the F-W-D both load and driving strains are equalized on all four wheels by exclusive construction that makes for economy in every point of service. F-W-D efficiency is remarkably demonstrated in road building and construction work of all kinds. Write for details.

The Four Wheel Drive Auto Co.
Dept. 106 Clintonville, Wis.
Canadian Factory: Kitchener, Ont.

efficiency that had most admirable results. Realizing the serious difficulty of accomplishing the many things that were imperative, hampered by a lack of necessary funds, he set about with undaunted energy to have the affairs of the city conducted in an economical, businesslike fashion, and to provide ways and means of increasing the city's revenues, and to secure for it the many things it so sadly lacked."

Some of the gains during his administration were as follows:

1. Raised wages of all city employes. Saved on salaries, by combining offices, $12,000.
2. Provided city with complete new motor fire apparatus.
3. Wiped out "Red Light District" and stopped gambling, including punch boards.
4. Gave city new electric street lighting system, without extra expense.
5. Secured new contracts for purchase of gas and electric light at old rate, altho. companies demanded same rate from city as from other consumers. Saving on gas yearly approximately $9,500. Saving $20,000 yearly for ten years on electric current.
6. Made contract with traction company to pay one-half of cost of two new bridges.
7. Settled garbage problem by establishment of a piggery, saving $50,000—cost of a new incinerator, and several thousands on yearly expense.
8. Recovered $125,000 from the county, which had been withheld against court decision.
9. Discovered that old Board of Control had signed away rights of city in a telephone merger; started suit, recovered for city $28,500 cash, 50 free telephones, use of company's poles, etc.; net gain to city estimated at $110,000.
10. Sold for $18,000 old city gas plant used eight years, cost $24,000.
11. Saved on lighting bills of municipal buildings $1,046 first year.
12. Saved thousands of dollars in car-fare for residents of Wheeling and surrounding towns by proving to Public Service Commission that traction companies had overvalued their properties. (Mr. Nagle was for thirteen years General Manager of the Wheeling Traction Co.)
13. Appointed Commission on Filtration and with it studied problems of a pure water-supply. Wheeling uses raw river water, treated during this administration with chlorine, and it was Mr. Nagle's chief desire to provide the city with the best and most permanent system of pure water. Plans submitted provided for a mechanical filtration system at a cost of $1,620,000. The bond issue, however, was defeated at a special election, less than 40 per cent of voters voting.
14. Saved city-manager plan for Wheeling by fighting in Legislature a "ripper bill" to combine office of Mayor and City Manager, reduce salary and make office of Chief of Police elective.

On the Calendar of Conventions

July 14-26.—Eagles Mere Park, Pa.
Summer School of Community Leadership, conducted by the American City Bureau. Fifth annual session. Address R. G. Stoddard, Business Manager of the American City Bureau, Tribune Building, New York City.

July 21-26.—Winona Lake, Ind.
Indiana Commercial Secretaries' Association. Annual meeting. Secretary, Don R. Sidle, Chamber of Commerce, Vincennes, Ind.

August 12-14.—Kingston, Ont.
Union of Canadian Municipalities. Annual convention. Secretary, W. D. Lighthall, Montreal Trust Building, Montreal, Que.

August 25-27.—Hartford, Conn.
American Association of Park Superintendents. President, J. F. Foster, South Park System, Chicago, Ill.

August 26-28.—Allentown, Pa.
League of Cities of the Third Class in Pennsylvania. Annual convention. Secretary, Fred H. Gates, City Clerk, Wilkes-Barre, Pa.

August 26-28.—Toronto, Ont.
Ontario Municipal Association. Annual meeting. Secretary, B. H. Spence, 705 Lumsden Building, Toronto, Ont.

August 26-29.—Toronto, Ont.
Fire Marshals' Association of North America. Annual convention. Secretary, John G. Gamber, Springfield, Ill.

August 27-29.—Yarmouth, N. S.
Union of Nova Scotia Municipalities. Annual convention. Secretary, Arthur Roberts, Town Solicitor, Bridgewater, N. S.

September 17-19.—Muscatine, Iowa.
League of Iowa Municipalities. Annual convention. Secretary, Frank G. Pierce, Marshalltown, Iowa.

September 23-26.—Chicago, Ill.
International Association of Municipal Electricians. Annual convention. Secretary, Clarence R. George, Houston, Tex.

September 29—October 2.—Cleveland, Ohio.
National Safety Council. Eighth annual Safety Congress. Secretary, W. H. Cameron, 208 La-Salle Street, Chicago, Ill.

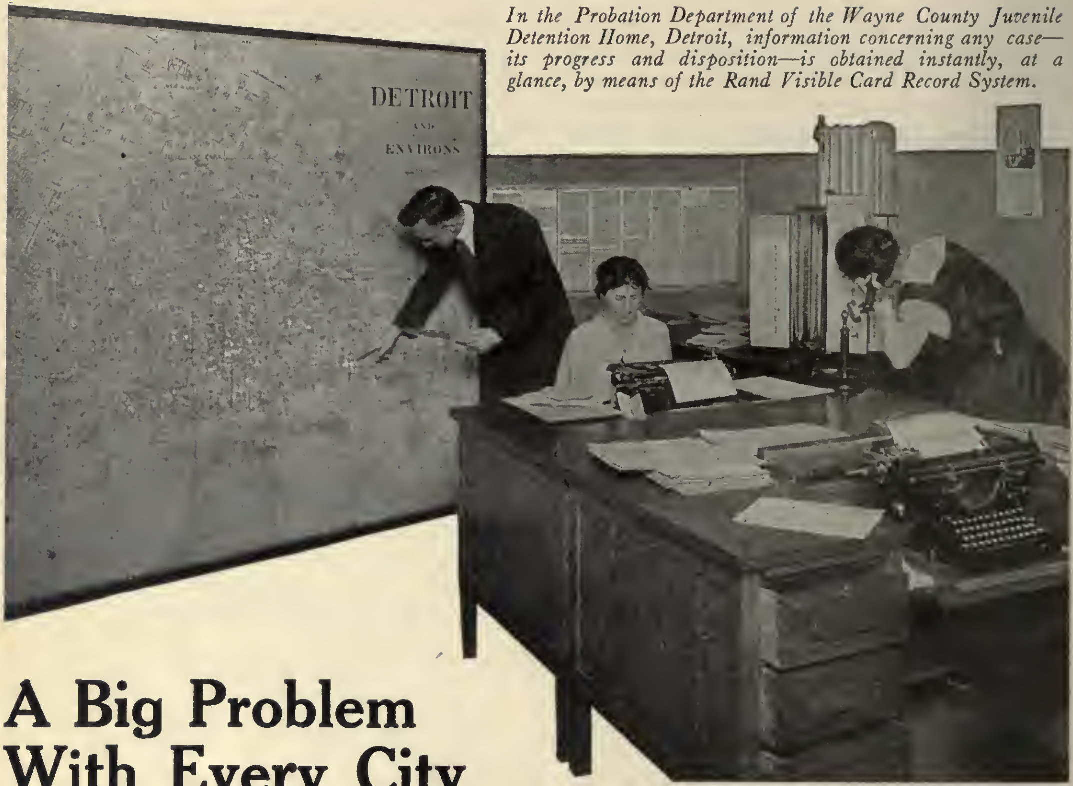
September 30—October 3.—Albany, N. Y.
New England Water Works Association. Annual convention. Secretary, Willard Kent, Narragansett Pier, R. I.

October 27-30.—New Orleans, La.
American Public Health Association. Annual meeting. Secretary, A. W. Hedrich, 169 Massachusetts Avenue, Boston, Mass.

October 29-31.—Philadelphia, Pa.
American Civic Association. Annual convention. Secretary, E. E. Marshall, Union Trust Building, Washington, D. C.

November 12-14.—New Orleans, La.
American Society of Municipal Improvements. Annual convention. Secretary, Charles Carroll Brown, 304 East Walnut Street, Bloomington, Ill.

December 26-30.—Cleveland, Ohio.
National Municipal League. Annual convention. Secretary, Clinton Rogers Woodruff, North American Building, Philadelphia, Pa.



In the Probation Department of the Wayne County Juvenile Detention Home, Detroit, information concerning any case—its progress and disposition—is obtained instantly, at a glance, by means of the Rand Visible Card Record System.

A Big Problem With Every City

Every city has a multitude of difficult problems to solve and one of the hardest of these is to find the right system to fit each particular line of work in the various departments.

RAND Visible Record Systems have solved this problem in a large number of instances—and solved it well.

When the city of Detroit wanted a system—quick, accurate and flexible enough to meet the growing needs of the Juvenile Department in maintaining a complete record of all cases involving Juvenile Delinquency—it was the Rand that enabled them to accomplish results even beyond their expectations.

Rand Systems are used in cities large and small on all sorts of records and in every department—Municipal Light and Power Plants, Gas Plants, Street Railway Plants, Water Works, and Reduction Plants. Rand Systems are adaptable to Police and Fire Department Records, Tax Records, Paving and Street Cleaning Records, Personnel and Employment Records—in fact wherever records are kept.

Your problems may be difficult but some Rand Visible Record System will help you to solve them. It will pay you to investigate.

Send for booklet "Helping Detroit Solve Its Delinquency Problem." It's a mighty interesting story. Address The Rand Company, Dept. A, North Tonawanda, N. Y.

RAND

VISIBLE CARD RECORD SYSTEMS

Municipal and Civic Publications

See also Department of News and Ideas for Commercial and Civic Organizations

A New Municipal Program.

CLINTON ROGERS WOODRUFF, Editor. D. Appleton & Co., New York. 1919. x + 392 pp. Tables and form. $2.25

This volume, one of the National Municipal League series, is a searching analysis of the two municipal programs that have been put forth by the League. It includes contributions from the second Committee on Municipal Program, composed of William Dudley Foulke, M. N. Baker, Richard S. Childs, John A. Farley, Mayo Fesler, Augustus Raymond Hatton, Herman G. James, A. Lawrence Lowell, William Bennett Munro, Robert Treat Paine, Delos F. Wilcox, and Clinton Rogers Woodruff. Three years of study by this committee resulted in the preparation of a "Model City Charter" which was unanimously adopted by the League. This volume contains the "Model City Charter" and explains the significance of its variations from the original municipal program of 1900 as to experts in public service, civil service and municipal efficiency, constitutional home rule, electoral provisions, the short ballot, administrative organization, the council, the initiative, referendum and recall, franchise policy, financial provisions, city planning, and business management for city courts in their relation to the structure of the city government. There is also a draft of an amendment to state constitutions to permit constitutional home rule, and alternative provisions for the inclusion of proportional representation and the preferential ballot. Appendix B contains the reports ot the League's Committee on Municipal Budget and Accounting, together with a series of forms. A fifteen-page index adds considerably to the value of the book for reference.

Experts in City Government.

EDWARD A. FITZPATRICK, Ph. D., Editor. D. Appleton Company, New York. 1919. xiv + 363 pp. Tables and diagrams. $2.25

This volume is one of the National Municipal League series. It is the work of nineteen specialists, who emphasize thruout the importance of purposes, and subordinate mere matters of governmental machinery. The authors are tremendously interested in making democracy efficient, but their interest is not primarily in efficiency. It is rather in seeing that the city accomplishes the social purposes which brought it into being and which make its continuance necessary. The public official who would keep pace with the growing tendency to call into conference experts on technical questions, will find in this volume a wealth of information as to the need for experts, their use and control, existing agencies for their training, and the very important topic of citizen coöperation with experts.

The Government of the United States: National, State and Local.

WILLIAM BENNETT MUNRO, Ph. D., LL. B. The Macmillan Company, New York. 1919. x + 640 pp. $2.75

The section devoted to local government in this volume covers approximately the last hundred pages. In them are traced the history of local government, the development of county government with its attendant problems, the various areas of local government, such as towns, townships and villages, and the development of the city, with an analysis of the factors in city charters. The chapter on municipal organization contains a significant sentence—"The science of municipal government is in large part the science of managing cantankerous men and women; for of such is the kingdom of democracy"—which gives an idea of the angle from which Prof. Munro views his subject.

Under Municipal Administration the various functions of the public courts, fire departments, public works, health, education and other departments are discussed. A complete chapter is devoted to commission and city manager government.

Handbook for Highway Engineers.

WILSON G. HARGER and EDMUND A. BONNEY. McGraw-Hill Book Company, Inc., New York. 1919. Third Edition, revised, enlarged and reset. xxii + 986 pp. $4.00

This book covers the principles of design, including grades, alignment, drainage and a discussion of the different materials, as well as the maintenance of roads. Preliminary investigations, survey, camp equipment, office practice, cost data and specifications are dealt with. The book closes with an appendix on traffic rules and regulations in Ohio and New York State.

Vital Statistics: An Introduction to the Science of Demography.

GEORGE CHANDLER WHIPPLE, Professor of Sanitary Engineering, Harvard University. John H. Wiley & Sons, Inc., New York. 1919. First edition. xii + 517 pp. 63 figures. $4.00

Altho not purporting to be a complete treatise on vital statistics, this volume is a distinct advance in bringing the study of demography to the point where public health executives may learn as they labor. The counsel contained in this book will untangle problems which have bothered the health officers. This is without doubt the most complete workable volume on statistics yet published, and should be in the hands of every student or compiler of vital statistics.

The Redemption of the Disabled.

GARRARD HARRIS. D. Appleton & Co., New York. 1919. xxvi + 318 pp. Illustrated. $2.00

The United States in undertaking to provide for its disabled men unhesitatingly ignored all old traditions, theories and ideas. Complete information as to the latest development in rehabilitation in France, Belgium, Britain, Canada and Italy, is now revealed as the basis of our new system. The yearly toll of maimed and injured in industry far exceeds all casualties the nation has suffered in the great war. The redemption of the disabled has a very strong municipal bearing, for it must be remembered that unless disabled men are restored to normal occupation they tend to become beggars or dependents, and beggars and dependents are supported for the most part at the expense of our cities. This book is a thoro technical analysis of the whole subject, written by men who have before them all the information obtainable thru official sources.

Principles of Government Purchasing.

ARTHUR G. THOMAS. D. Appleton & Co., New York. 1919. xii + 274 pp. $2.25

This volume should be of especial interest to city managers, purchasing agents, auditors, comptrollers, and to other purchasers using public funds. It is divided into two parts, the Basic Problems of Government Purchasing and Purchasing Records. Under the first are discussed the advantages and disadvantages of centralized purchasing, with illustrations of business corporations and cities which now have central purchase departments. The proper form and extent of centralization, the legal restrictions with respect to cities, labor conditions, authority of the agents, etc., are discussed in this section.

Under Purchasing Methods the author takes up the determination of purchase requirements, determining current market conditions and tendencies, the securing of competition, the development of specifications, inviting bids, the purchase agreement, publicity, follow up, inspection and handling of invoices and the payment of bills. The Appendix contains purchasing systems of two great corporations and an analysis of continuing agreements in city purchasing.

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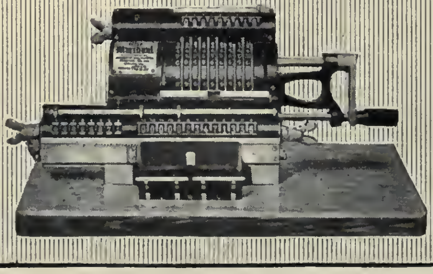

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In heavy breeze or light, a flag supported by a Walworth Steel Flag Pole always flies free. The fitful wind, blowing first from one direction, then another, cannot cause the flag to foul. The patent ball-bearing top changes instantly with every veering of the wind. The flag and halyard are always on the lee side of the pole.

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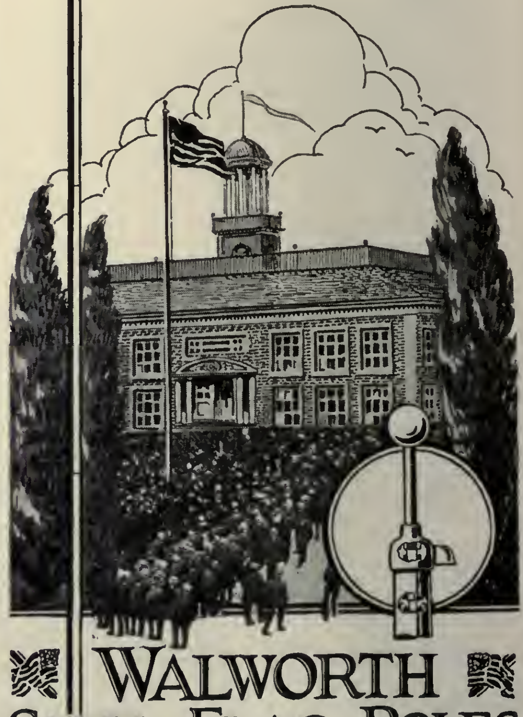


WALWORTH STEEL FLAG POLES

The Movement for Budgetary Reform in the States.

WILLIAM FRANKLIN WILLOUGHBY. D. Appleton & Co., New York. 1918. xi + 254 pp. $2.75

Because of the fact that state revenues are to a large extent derived from the same sources from which municipalities derive their funds, the matter of budgetary reform on the part of the state is of vital interest to municipal officials. On this account far-sighted municipal officials, especially those in states where such officials have a large share in influencing public opinion thru the state leagues of municipalities, will soon make a serious study of state finance with a view to demanding of the state governments the same degree of efficiency in the handling of the public funds that is demanded of them. This book, one of the studies in administration by the Institute of Government Research, will furnish an excellent introduction to such a study for it discusses budgetary legislation in thirty-two states, with a comparative analysis of the formulation of the budget and legislative action upon it. An excellent bibliography is included in the appendix.

The American Year Book. A Record of Events and Progress, 1918.

FRANCIS G. WICKWARE, B. A., B. Sc. D. Appleton & Co., New York. 1919. xviii + 850 pp. $3.50

This handy reference volume contains its usual quota of indispensable information on current topics. Among the sections of particular interest to municipal officials and students of municipal government are: Chapters 5 and 6 on state, county and municipal government; Chapter 9, Public Resources and Public Works; Chapter 10, Public Services; Chapters 13 and 14 on public finance, banking, insurance, social and economic problems; Chapter 15, on labor and labor legislation; and Chapters 25 and 30 on medical and educational problems.

The Little Town.

HARLAN PAUL DOUGLASS. The Macmillan Company, New York. 1919. 258 pp. Illustrated. $1.50

There are 12,000 communities in the United States, containing 12,000,000 Americans, which have been largely neglected in spite of the fact that the little town functions as an important distribution center to the surrounding area and has problems that are neither urban nor rural. The little townsman tends to copy the city, ignoring the fact that there are infinitely greater business and social opportunities awaiting him in a social alliance with the country. This little book, like the subject with which it deals, is worth a serious study.

The Eve of Election.

JOHN B. HOWE. The Macmillan Company, New York. 1918. 283 pp. $1.25

This volume is designed as a help to new and old voters alike but is especially intended to answer the many questions that newly enfranchised women voters will be apt to ask. It is a very readable analysis of federal, state and local government, and how the individual's votes may affect them. The appendix contains information for voters in the state of New York.

Punishment and Reformation: A Study of the Penitentiary System.

FREDERICK HOWARD WINES, LL. D. Thomas Y. Crowell Company, New York. 1919. Revised Edition. xi + 481 pp. $2.50

Grouping of Public Buildings.

A report to the Milwaukee Common Council by the Board of Public Land Commissioners, April, 1919. Among the topics discussed are Milwaukee's need for a civic center, the arterial system, and available locations for county and city buildings, with special consideration of the site designated as the "revised Metropolitan Park Board scheme." 11 full-page sketches and diagrams add value to the report. (Write to Roland E. Stoelting, City Planning Engineer, for copies.)

City Plan for Akron.

Akron's present situation is typical of that of many large cities thruout the country. It has grown in population from 3,266 in 1850 to over 175,000, "without any thought as to its proper development," and hence finds itself today "lacking the proper thorofares for adequately handling the traffic of such a city, lacking parks and boulevards, without a civic center, and with no thought given to the laying out of its industrial and business districts nor to the protection of its residential sections." The report prepared for the Akron Chamber of Commerce by John Nolen, city planner, includes a detailed civic survey and an adequate plan, illustrated by two large attached maps and numerous full-page maps showing existing and proposed streets, street car lines, parks, playgrounds and schools, the location and distribution of railroads and industrial properties, zone plan, etc., and by a number of photographs showing conditions both desirable and undesirable. 91 pages. Quarto. 1919. (Apply for copies to Vincent S. Stevens, Secretary of the Chamber of Commerce.)

Practical Chart of Town Planning.

This portfolio of the Library of Plates for Architects gives in chart form the procedure step by step under the Housing and Town Planning Act of 1909 in England and Wales, something that we in America shall need when the procedure for housing and town planning operations crystalizes into law. (Write to Technical Journals, Ltd., 27-29 Tothill Street, Westminster, London, Eng.)

National Municipal Review Now Issued Monthly.

With the May issue of the *National Municipal Review*, published by the National Municipal League, Philadelphia, Pa., the magazine becomes a monthly instead of a bi-monthly as heretofore. As a magazine for those interested in good municipal government, the *National Municipal Review* has become very well known during the seven years of its existence, and the Editors of THE AMERICAN CITY join in wishing it continued success in this good work in the years to come.

A Model Garden Suburb for Shipworkers at Wilmington, Del.

The influx of shipworkers last year into Wilmington resulted in a large-scale housing development planned by John Nolen and including, besides 506 houses and 3 apartment buildings, 6 stores, a community building, and public utilities, such as roads, sidewalks, sewers, water, gas and electric service. Under the title, "Union Park Gardens," a 24-page article, reprinted from *The Architectural Record*, gives an account of this development, with numerous diagrams and drawings and an attached panoramic view. 1919. (Copies can be secured from Ballinger and Perrot, Architects and Engineers, N. W. Cor. 17th and Arch Streets, Philadelphia, Pa.)

Public Health and Social Welfare Survey of Bloemfontein, South Africa.

After a serious outbreak in Bloemfontein of the epidemic which swept over all South Africa, a survey of housing and health conditions in that town was undertaken, which has resulted in the publishing of a 24-page booklet containing the recommendation of the Joint Housing and Public Health Committees for solving the town's poor-white problem within the next ten years. The suggested recommendations include the establishment of a Department of Social Welfare, better provisions for medical aid and for physical education and general schooling, erection of workingmen's cottages in connection with a comprehensive city plan, home rule for cities, and a ministry of health. 1919. (Issued by The Corporation of Bloemfontein, South Africa.)

Proceedings of American Society for Municipal Improvements.

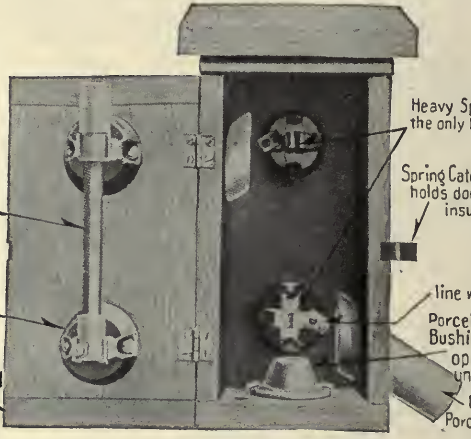
Report of the 25th annual convention held at Buffalo, N. Y., October 2-4, 1918, including much valuable material on pavement construction and maintenance and on waste and sewage disposal, an account of the business proceedings, constitution and membership list of the Society. Bound in cloth. 488 pp. (Send requests for copies to Charles Carroll Brown, Secretary, Bloomington, Ill.)

Rural Methods of Waste Disposal.

A 24-page bulletin issued by the State Department of Health of Maine. Illustrated by diagrams. (Apply to L. B. Bristol, M. D., Commissioner, Augusta, Me.)

Westinghouse Type OD Safety-First Fuse Box

Capacity up to 30 Amperes 7500 Volts


Expulsion-Type Fuse Tube held in clips. Easily detached with one hand Clips do not carry any current
Pillar Porcelain Insulator
Door reinforced at top and bottom to prevent warping
Heavy Spring Contacts the only live parts.
Spring Catch positively holds door closed and insures contact.
Double-Screw Terminals in line with bushings.
Porcelain Expulsion Bushing, with large opening close under fuse tube.
Extra-Heavy Porcelain Bushings.

Bottom view showing clamps for holding paper discharge indicators under expulsion bushing

SAFE because when the door is open the fuse tube is entirely disconnected from both line and transformer and can be handled with bare hands with absolute safety.

EASY TO INSTALL because light in weight and provided with cross-arm hanger. Leads are clamped firmly in double-screw terminals, without soldering.

CONVENIENT because the blowing of a fuse is indicated without removing the full tube for inspection.

CAPACITY up to 30 amperes, 7500 volts.

SIZE 7½" wide, 7¾" deep, including overhang of roof, and 13¼" high.

WEIGHT 10 pounds.

SHIPMENTS at once from stock.

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WESTINGHOUSE ELECTRIC

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Send for Miniature Catalogue 1-B-1

Westinghouse Electric & Manufacturing Co.
East Pittsburgh, Pa.

Shanghai Municipal Council.
Report for 1918 and budget for 1919. 485 pp., 8 by 13 inches. Illustrated by photographs, diagrams and graphs. (Copies procurable from the Secretary's Office, Municipal Council, Shanghai, China.)

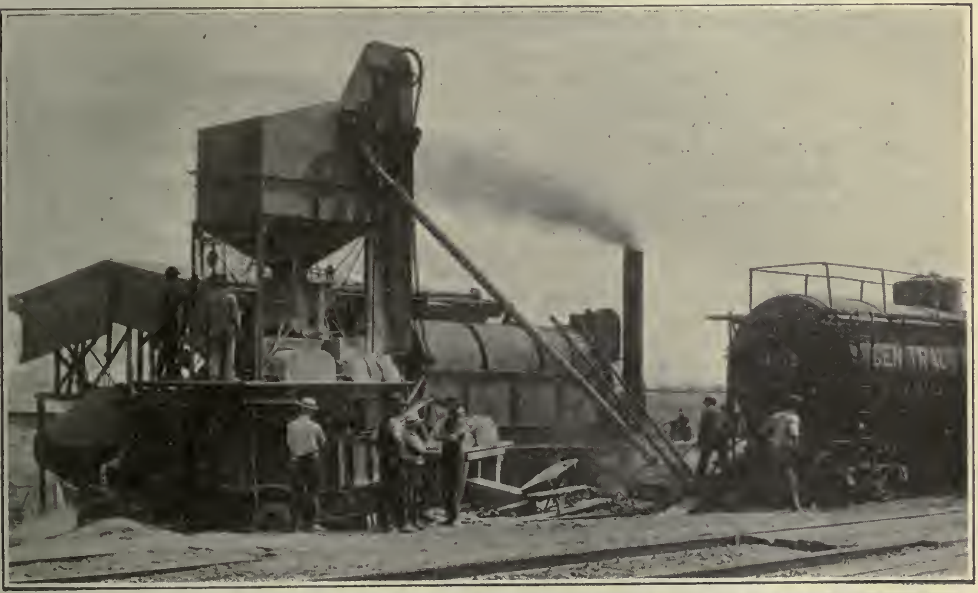
The North End, Boston, Mass.
A survey and a comprehensive plan submitted by the City Planning Board, Boston, Mass. 1919. 99 pp., illustrated by numerous diagrams and photographs. 2 attached maps. (Copies can be secured on application to W. J. Doyle, Assistant City Clerk.)

Methods, Materials and Appliances

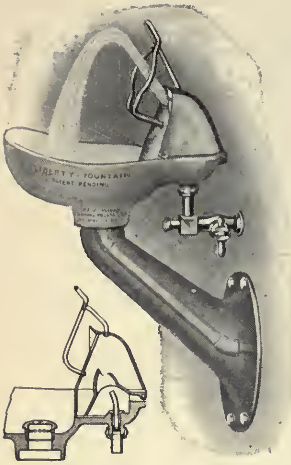
News for Boards of Public Works, Engineers, Contractors, Purchasing Agents, and Others Interested in the Economical Construction and Efficient Operation of Public Improvement Undertakings

A Semi-Portable Road Plant of Large Capacity

The semi-portable road plant, model No. 5, illustrated herewith, is guaranteed by the manufacturers, Hetherington & Berner, of Indianapolis, Ind., to be of sufficient capacity to pave 120 to 150 square yards of 2-inch sheet asphalt surface or bituminous concrete surface per hour. The different elements—dryer, storage bin, mixer, elevators, weighing box and asphalt bucket—are all of especially large size and capacity, and retain the successful features of the company's former models. The material being forced thru a horizontal drum by conveying flights, the coarser particles of aggregate are not allowed to run ahead of the finer particles, as happens in a "gravity discharge" dryer. The storage bin of this model has a capacity of 7½ tons. A 9-foot twin shaft mixer of the Pug-Mill type is provided, designed for a mixed batch of about 1,000 pounds. Both the feed and hot sand elevators are of the link-belt type, of No. 95 chain-carrying malleable iron elevator buckets, so spaced as to give ample carrying capacity for the needs of the plant. The weighing box is of 10-foot steel plate, mounted upon a 1,500-pound double-beam scale. A steel asphalt bucket of 2½-cubic feet capacity, hung from a 400-pound dial scale and trolley, is arranged in convenient location in front of the mixer. The plant may be purchased with or without the melting kettles. For a portable plant the company recommends the portable engine-and-boiler, or road tractor, as the most convenient power unit; however, if the plant is to be set for any considerable length of time, an electric motor is the ideal source of power. Thirty-five horse-power should be allowed for driving the plant at full capacity.



ASPHALT PLANT FOR THE CITY THAT DOES ITS OWN PAVING



Germ Proof Water *from* Germ Proof Fountains

The trouble with most of the so called "sanitary fountains" today lies in the fact that they are designed with vertical jets. Such a fountain does more harm than good, because the water which has touched the lips may fall back upon the metal top or bubblers and seriously contaminate the source of supply. The next drinker gets the germs. This applies both to the intermittent and continuous flow fountains.

The PURO LIBERTY FOUNTAIN

is doubly safe—because it has a sloping stream and a mouth guard. It is utterly impossible for lips to touch the jet or for the water to fall back. The Puro is the most sensible and most sanitary drinking fountain on the market today. It fulfills all the requirements of cleanliness, economy and design.

Equip your public buildings and parks with PURO LIBERTY FOUNTAINS.

Write us for illustrated descriptive matter.

Puro Sanitary Drinking Fountain Co.
HAYDENVILLE, MASS., U. S. A.

S. F. Bowser Organizes Canadian Factory

For some time S. F. Bowser & Company, Inc., Fort Wayne, Ind., manufacturers of tanks, measuring pumps, oil filters, etc., have operated their Canadian factory and offices under the direction of the home offices at Fort Wayne. However, the Canadian business has grown so steadily from year to year that they have reorganized the Canadian branch as a strictly Canadian organization at 66 Frazer Avenue, Toronto. The Canadian plant is commodious, with splendid railway facilities, and is amply equipped in all respects.

H. C. Christie, who has been for a number of years connected with the Canadian factory of the Bowser Company, recently as Sales Manager, has been elected Manager of the new company, with E. E. Cummings as Factory Manager. This organization stands ready at all times to assist users of gasoline and oil in solving their storage, distribution and recovery problems.

Chloride of Lime and Liquid Chlorine for Water Sterilization

Since 1901 the Hooker Electro Chemical Company, 40 Wall Street, New York City, has been manufacturing chloride of lime and liquid chlorine. The steady growth of this company, which was one of the pioneers in the electrolytic field, has been due to the high quality of product and the fidelity of service. All products and every process have been thoroly investigated by the Research Department, and all manufacturing is directed and controlled by technical experts. One of the features of this service which will well be remembered by city officials is the prompt delivery which it was possible to effect during the war, thru constant endeavor to always be in touch with the needs of the field. Hooker hydrochlorite ranks among the best for emergency sterilization, and Hooker liquid chlorine is standard for routine sterilization. Price lists and descriptive folders will be sent by the company to any water-works officials who are interested in the high grade of sterilizing chemicals carried by this company.

A Memorial Park for Muskogee, Okla.

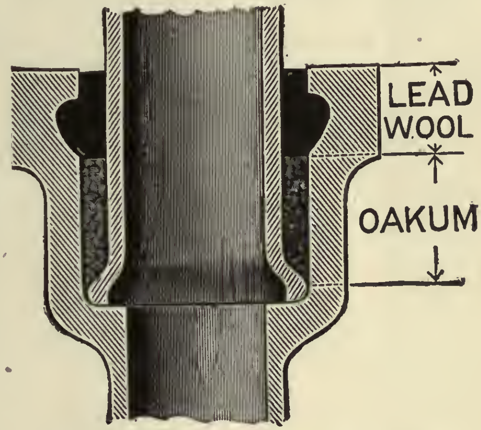
Myron Howard West, of the American Park Builders of Chicago, has been commissioned by the Park Commission of Muskogee, Okla., to prepare plans and supervise the improvements for a $100,000 development of Agency Hill, a tract of approximately 100 acres, as a memorial to the soldiers of that city. Some of the features included in the plan are: suitable entrances, an open-air theater, a 10-acre lake, and the remodeling of the Agency House, a mammoth structure of native rock, to serve as a museum, refectory and rest house. Roads will be built, making accessible the mountain and lowlands. Athletic facilities, including a swimming pool, will be installed, and the tract will be generally improved to form a great public playground. Fitting commemoration of Muskogee heroes of the Great War is to be incorporated in the plans. Agency Hill is one of the units suggested by Mr. West in his report for a comprehensive system of parks for Muskogee, submitted several years ago.

Mr. West has also been engaged by the City Planning Commission of Decatur, Ill., to prepare a comprehensive city plan for that city. The city, which now has a population of 50,000, will be planned to accommodate 150,000.

Well-Calked Joints Reduce Water Leakage

Poorly calked joints undoubtedly are responsible for a great part of the water losses from city mains. This matter is being more fully realized every year by water-works men, who appreciate more and more fully that leakage from water mains means leakage from joints and that this is due to improper calking.

Pipe calking requires skilled labor. To be satisfactorily performed it must be done by a man of fair intelligence, with some skill and ingenuity, and with enough character to enable him to have a desire to do his work well, and therefore to perform a piece of work which will remain in prime condition in spite of the fact that it may be covered with several feet of earth which will conceal more or less permanently any defects in his work. In "Pipe Progress," published by the American Cast Iron Pipe Company, Birmingham, Ala., there is an interesting discussion of pipe calking and a table showing the financial loss to a water-works from various-sized openings from 1/32-inch to 1-inch diameter under 40 pounds pressure with water at a cost of 10 cents per thousand gallons. Very few people realize that at this rate a 1/32-inch diameter leak costs 60 cents a month, and a 1-inch leak costs $211.80 a month; astounding figures, but nevertheless true, and all from a cause which can be corrected by thoro, competent and honest calking.



Courtesy United Lead Co.

HOW PIPE JOINTS MAY BE CALKED

Tires of Restful Dependability

AFTER the stress, and perplexing problems of the day's work, the most restful relief in all the world is a cool, smooth spin through the evening on tires you know will bring you back-home without mishap.

The thing that makes an evening ride on Silvertown Cord Tires wipe out the troubles of the day is your complete trust in Silvertowns—a trust founded upon your long experience with Silvertown dependability.

But Silvertown dependability is founded on a thing so real, so definite you can put your hand on it, and feel it. It is Silvertown *cable cord,* and the special method of wrapping it into the Silvertown body.

Silvertown's easy riding comfort, unequalled in any other tires, is due to the flexibility of its rubber saturated cable cord.

In its specially wrapped body, it takes up the jolt and jar of rough roads much as a coil spring absorbs a blow.

Silvertowns — the trim, smart tires you see with the Twin Red Diamonds on the sidewall — add hours and hours of perfect ease and comfort after the day's work. And they last, rendering you matchless mileage.

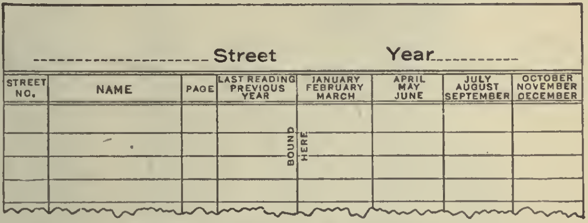
Buy Goodrich Tires from a Dealer.

GOODRICH TIRES

"BEST IN THE LONG RUN"

A Simple Method of Keeping Meter Accounts

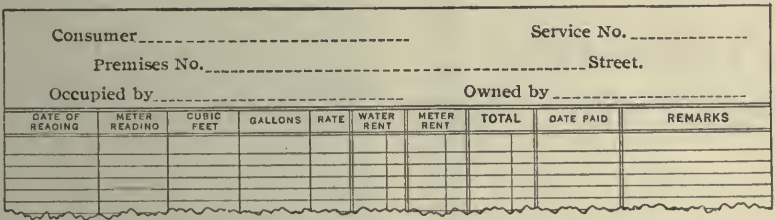
A simple, concise method of recording meter readings and of keeping the accounts of metered services is provided by the Buffalo Meter Co., 2917 Main St., Buffalo, N. Y. The system requires two small books. One, the pocket meter reading book, contains 100 double pages of 20 lines each, which will hold quarterly readings of 2,000 meters for one year. The ruling, illustrated herewith in Form No. 1, also permits of monthly readings. The book is 8½ inches on the binding side, 4¾ inches wide and ⅝-inch thick, and is easily carried in the pocket. The binding is of stiff drab canvas, with a flap for keeping the place while reading a meter. In the other book, which contains an index and 300 pages, each page is ruled for one account like Form No. 2, and will last nine years when meters are read quarterly, or three years when read monthly. This book is 8 inches by 10½ inches, and 1⅛ inches thick, and is bound in dark pebble cloth with red leather back and corners. It is usually kept at the office, where the readings are entered from the small pocket meter reading book. For those who prefer the loose-leaf style, the company can also supply an aluminum holder and slips for meter reading and a loose-leaf ledger for meter accounts.



____________ Street Year__________

STREET NO.	NAME	PAGE	LAST READING PREVIOUS YEAR	JANUARY FEBRUARY MARCH	APRIL MAY JUNE	JULY AUGUST SEPTEMBER	OCTOBER NOVEMBER DECEMBER

No. 1.—METER RECORD FOR MONTHLY READINGS



Consumer__________________________ Service No. ____________

Premises No.____Street.

Occupied by________________________ Owned by ____________________

DATE OF READING	METER READING	CUBIC FEET	GALLONS	RATE	WATER RENT	METER RENT	TOTAL	DATE PAID	REMARKS

No. 2.—BLANK FOR RECORDING INDIVIDUAL ACCOUNT

Dodds, Carpenter and Gilchrist with F. P. Allen

F. P. Allen, Manager of the Fuel, Road and Asphalt Department of the Standard Oil Company of Indiana, has secured the services of B. E. Dodds, who was formerly State Highway Commissioner of Wisconsin, and H. B. Carpenter, formerly in charge of road construction for the St. Louis parks. F. H. Gilchrist, who was formerly with the Standard Paint Company, is now with the Roofing Department, which is under Mr. Allen's direction.

Consulting Engineer Moves to New Offices

Ernest P. Goodrich, consulting engineer, has recently sent out cards announcing the removal of his office to 140 Nassau Street, New York City. Mr. Goodrich is engaged in water-supply, sewage disposal, industrial planning, and in general engineering practice.

New Low-Level Record Reached in Trinidad Asphalt Lake Soundings

Recent borings made in the famous asphalt lake on the island of Trinidad have reached a new low-level record of 150 feet. The previous record, made in 1893, was 135 feet. On both occasions the asphalt was found to be of uniform character thruout. These latest attempts to find the bottom of the great mass of asphalt were conducted by Geo. A. Macready, geologist, at the instance of Dr. Clifford Richardson, who has studied this asphalt wonder for many years. Great difficulties attend any attempt to sound the lake, as it is in constant, tho almost imperceptible, motion. The pressure of the mass of asphalt at any great depth against the drilling apparatus causes it to bend, and the deflection from the perpendicular is so great that further boring is prohibited.

Announcement is made by The Barber Asphalt Paving Company, Philadelphia, that following the promotion of Charles W. Bayliss, formerly manager of the Street and Road Department, to Vice-President in charge of sales, the following changes in organization became effective June 1, 1919: J. E. Morris was made Manager, Street and Road Department, Philadelphia, Pa., and G. R. March was promoted to succeed T. H. Morris as Sales Manager of the Iroquois Department.

Tank Makers to Build Saw Mill

The W. E. Caldwell Company, 247p Brooks Street, Louisville, Ky., manufacturer of cypress tanks, tubs and towers, has associated with J. B. Crawford, an experienced saw mill man, to build a 30,000 to 35,000 cut band saw mill in St. Landry Parish, Louisiana, where the company owns large tracts of cypress, ash, oak and gum timber.

CLOW CHICAGO

An Attractive Fountain

adds beauty and dignity to any part of a city or park. We have designs at a range of prices to suit any appropriation or fund.

Lamp Posts

that light thoroughfares effectively and are ornaments by day. Large stocks always on hand.

Man-Holes

made from the best pig-iron (not scrap) in all styles.

Let us estimate on your requirements. Write for further information. If it's plumbing fixtures or foundry work, we have a complete stock. We pride ourselves in making quick shipments.

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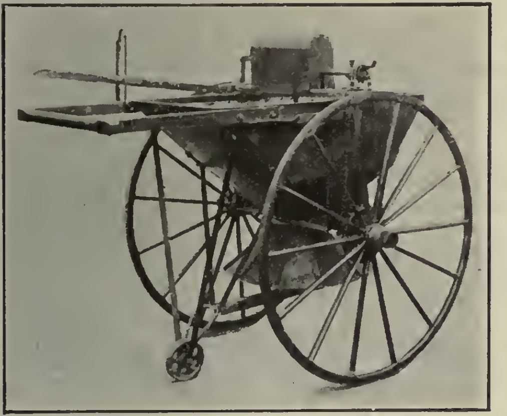
A party is traveling thru the New England States—possibly he may seek other fields—representing himself as the relative of a former officer of the Thomson Meter Company, and that he is well acquainted with the present officials and representatives, his story being that he has lost his money and is desirous of returning to New York, coupled with a request for a loan to pay hotel bills, railroad fare, etc. This party is an impostor, and the company is very desirous of getting hold of him. In the event that he should call upon you, please have the fellow held on suspicion, wiring E. M. Shedd, 266 Brookline Avenue, Boston, Mass., or Thomson Meter Company, 100-110 Bridge Street, Brooklyn, N. Y., and the necessary steps on the company's part will be promptly taken.

An Easy Method of Sanding Streets

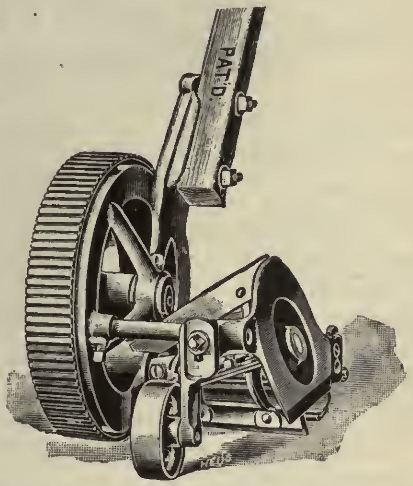
When a surface of sand is wanted on a road which has been recently oiled or on a pavement which is icy, it is rather difficult to secure an even, satisfactory distribution by throwing sand by shovels. The Warren Brothers Company, Boston, Mass., has developed a one-man sand-spreading cart which is substantially constructed and is equipped with a galvanized sheet metal body, large diameter wheels and small pilot wheel for balancing it when standing. The sand falls thru an opening in the bottom of the carrying hopper onto a revolving cone, which distributes it uniformly over the surface of the street. This distributing cone is revolved by means of a chain and sprockets, which can be thrown out of gear when moving a full cart to a new location. The flow of sand from the carrying pan to the revolving cone is controlled by means of a lever. This cart is a pronounced labor-saver and insures a more uniform distribution of surface aggregate than by hand throwing.



MACHINE FOR INSURING NON-SLIPPERY STREETS

Lawn Trimmer

The Pennsylvania Lawn Mower Works, Inc., of Philadelphia, manufactures a lawn trimmer whose unique construction permits the cutting of grass left by the ordinary lawn mower not only close up to a wall, fence, tree, etc., but even under fences or rock-cut bases of tombstones, house foundations and other places hitherto out of reach of anything but hand shears. This model, shown in the accompanying illustration, has a 9½-inch drive wheel and a four-blade cylinder. The width of cut is 5½ inches.



THIS MACHINE SUPPLEMENTS YOUR LAWN MOWER

A New Organization—"The Asphalt Association"

Representatives of the principal asphalt producing companies of the United States and Canada have completed the organization of "The Asphalt Association." Its purpose will be to disseminate information regarding the uses of asphalt with particular reference to highways and street paving, coöperating with city, county and state officials and with scientific bodies and colleges to bring about the most effective use of asphalt. The officers elected for the ensuing year are: President, J. R. Draney; Vice-President, W. W. MacFarland; Treasurer, N. G. M. Luykx. The Secretary of the Association will be the active officer in charge of the affairs of the body. He will be J. E. Pennybacker, formerly Chief ot Management of the U. S. Bureau of Public Roads, and during the war period Secretary of the U. S. Highways Council.

The New York office will be located at 15 Maiden Lane. Other offices will soon be established at Chicago and Atlanta, and ultimately in other cities in the United States and in Canada, on account of the fact that city and highway expenditures for this and next year are estimated to reach the vicinity of a billion dollars.

Summer School *of*

PRELIMINARY PROGRAM OF NINETEEN-NINETEEN SESSION

MONDAY, JULY 14

FORENOON

Registration of Students
Announcements

AFTERNOON

The Dawn of a New Day
Harold S. Buttenheim, President
The American City Bureau

The Summer School
A statement by Lucius E. Wilson, First Vice-President of The American City Bureau and Dean of the Summer School

The Art of Public Speaking
Henry Gaines Hawn, President
Hawn School of Speech Arts

THURSDAY, JULY 17

FORENOON

LECTURES AND DISCUSSIONS

Forums in Factories—Meeting the Industrial Unrest
George W. Coleman, President
Open Forum National Council

The Assessment of Real Estate for Taxation
Lawson Purdy, President
National Municipal League

Proportional Representation in Chamber of Commerce and City Elections
Prof. A. R. Hatton, Charter Expert
The American City Bureau

AFTERNOON

Essential Steps in City Planning
J. Horace McFarland, President
American Civic Association

Finding More Money to Run the City
Lawson Purdy, President
National Municipal League

TRAINING IN PUBLIC SPEAKING

Classes in Public Speaking and Preparation for It

Debate: "Resolved that every municipality ought to appoint an Official Board of Censorship of Motion Pictures."

TUESDAY, JULY 15

FORENOON

LECTURES AND DISCUSSIONS

Making the Chamber of Commerce Dominant in Its City
Charles A. Simmons, Campaign Manager
The American City Bureau

Chamber of Commerce Headquarters
James O. Stevenson, Second Vice-President
The American City Bureau

Committee Organization and Control
Samuel Wilson, Associate Director
The American City Bureau

The Art of Public Speaking
Second lecture by Henry Gaines Hawn

AFTERNOON

Modern Municipal Equipment and Methods
Edgar J. Buttenheim, President and Mgr.
The American City Magazine

STUDY GROUPS

Community Leadership

TRAINING IN PUBLIC SPEAKING

Classes in Public Speaking and Preparation for It

Debate: "Resolved that no illiterate ought to be allowed to vote."

FRIDAY, JULY 18

FORENOON

STUDY GROUPS

Office Practice and Filing
Newspaper Writing and Other Publicity (Part I)
Constitution and By-Laws

AFTERNOON

LECTURES AND DISCUSSIONS

Cooperation with Manufacturers in Improving Production Methods
Morris L. Cooke
Consultant in Industrial Management

Social and Labor Legislation
Samuel McCune Lindsay
President American Association for Labor Legislation

TRAINING IN PUBLIC SPEAKING

Classes in Public Speaking

Debate: "Resolved that women should be eligible as officers and directors of Chambers of Commerce."

WEDNESDAY, JULY 16

FORENOON

STUDY GROUPS

Program of Work
Committee Organization
Committee Control

AFTERNOON

LECTURES AND DISCUSSIONS

The New Spirit in Industrial Relations
Dean S. S. Marquis
Department of Education
Ford Motor Company

Get Together or Perish—An Open Forum in Every Community
George W. Coleman, President
Open Forum National Council

TRAINING IN PUBLIC SPEAKING

Classes in Public Speaking and Preparation for It

Debate: "Resolved that advocacy of Bolshevism at public meetings should be forbidden by municipal ordinance."

SATURDAY, JULY 19

FORENOON

LECTURES AND DISCUSSIONS

Housing—in Theory and Practice
George Gove, Field Secretary
The American City Bureau
Formerly with U. S. Housing Corporation

City Planning for Industrial Development
Perry R. MacNeille
Engineer and Town Planner

What Chambers of Commerce Can Do Towards the Settlement of Public Utility Problems
Delos F. Wilcox, Ph.D.
Consulting Franchise and Public Utility Expert

Industrial Democracy
Speaker to be announced

AFTERNOON

TRAINING IN PUBLIC SPEAKING

Classes in Public Speaking

Debate: "Resolved that every American city ought to have the right of excess condemnation."

INSTRUCTORS OF STUDY GROUPS

Members of the American City Bureau Staff who will serve as instructors of the Study Groups at the Summer Schools will include:

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Sherrard Ewing
J. C. R. Foster
George Gove
A. R. Hatton
Wayne D. Heydecker
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SUMMER SCHOOL IN COMMUNITY LEADERSHIP
ACB

VOLUME XXI
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The American City

NEW YORK
AUGUST, 1919

The Financing of Memorial Buildings

By Harrison G. Otis
Manager, Bureau of Memorial Buildings, War Camp Community Service

EDITOR'S NOTE.—*Latest reports from the Bureau of Memorial Buildings of the War Camp Community Service (formerly the National Committee on Memorial Buildings) show that some 265 cities and towns in the United States have definitely decided upon community houses, auditoriums and other variations of Liberty Buildings as war memorials, and that 1,000 others are considering similar projects.* THE AMERICAN CITY, *feeling that one of the most important questions to be solved by local memorial committees is that of financing the erection and maintenance of these memorials, asked Mr. Otis to write the following article on the subject.*

THE problem of financing memorial community buildings is three-fold. First must come the securing of funds for the erection of the building; secondly, the providing of proper equipment; and, thirdly, some plan for means of maintenance. Local conditions will largely determine the methods to be employed in each city or town, but there are certain principles which will apply very generally.

Construction

Funds for the erection of memorial community buildings may be secured by any one of three general methods:

1. Voluntary contributions by popular subscription
2. Public funds secured by bond issue and taxation
3. A combination of popular subscription and public funds

Popular Subscription.—A strong feeling exists in many communities that funds for memorial buildings should be raised solely by voluntary contributions. The arguments presented are: that such tributes should be the free-will offering of the people as expression of gratitude and thanksgiving to the living and of reverence to the fallen; also, that by taxation soldiers and sailors are made to help pay for their own memorials. The popular method of securing contributions is by a short campaign similar to the "drives" utilized for the collecting of war funds. Every community has had sufficient experience in the conduct of these drives to make a detailed outline of campaign unnecessary. Inasmuch as the memorial building movements are local rather than national, the necessary preliminary publicity will call for more effort, and those in charge of the campaign must develop a strong local program of publicity.

It is usually advisable to have the memorial project sufficiently well worked out so that those in charge of the campaign may have a definite amount of money as the goal of the drive. The details may be postponed, but it is much easier to sell concrete plans than general ideas. By all means the actual drive for funds should be thoroly organized so as to reach every source of contribution. It should be well-timed, and limited to a short, intensive campaign. All possible help in the way of speakers, exhibits and special publicity features should be made use of. Among the devices employed in such drives are:

(a) The sale of stock, non-assessable

and non-dividend paying. Such stock should be issued in certificates of small denomination, and the amount purchasable by a single buyer so limited as not to give the control of the project to a small group of people. This danger may be avoided, however, by providing that all holders of stock shall have equal voice in the election of the memorial building trustees, regardless of the amount of stock held by the individual.

(b) Subscriptions for bricks at one dollar each enter into the campaign plans at Philadelphia and Cincinnati.

(c) Under certain types of organization, memberships of various classes may be sold; or, better yet, all memberships may be of uniform size, the amount being low enough to prohibit no one, and the larger contributors being encouraged to purchase "plural" memberships. Should the membership method be adopted, it is quite essential that the privileges of membership be clearly defined and announced to avoid future misunderstandings. In the majority of cases such membership will carry with it no special privilege other than a vote as to the trustees or directors of the memorial building association.

(d) Many communities are using the simple subscription method as employed for raising funds during the Red Cross and United War Work drives.

In all cases pledges should be made payable on the installment plan, and the amount to be raised should be increased sufficiently to allow for the shrinkage inevitable with the pledge method.

The donation of liberty bonds and war saving stamps should be stressed, and they should be accepted at par.

True democracy is the essence of the community house movement, hence no would-be contributor should be barred because of limited means. Whatever method is used, some provision must be made for small subscriptions. Memorial building stamps similar to war saving stamps and exchangeable for stock, bricks, membership or other larger units may be utilized. Again, a pledge card with dates and amounts in sums of ten cents, twenty-five cents and fifty cents printed around the edges, to be punched upon payment, à la "sugar card," is another workable suggestion.

Public Funds.—Many communities are viewing war memorials as public obligations to be paid for by public funds. Where these memorials are to take the form of buildings to be used by the public and open to all on an equal footing, the argument seems well sustained. This view is particularly defendable when the building is to serve other purposes than those of a community center. Several state legislatures have recently passed laws definitely authorizing the issuance of bonds for the construction of memorial buildings, and providing for taxation as a means of maintenance. Many communities are planning to erect memorial buildings which shall provide space for municipal offices, auditoriums, libraries, art galleries, and other public purposes, in addition to the social and recreational features usually found in community houses. It is, of course, highly proper that all or a large part of the funds for such buildings be secured by bond issue to be funded by taxation.

Combination of Subscription and Taxation.—Where local conditions warrant, the funds for memorial buildings may be raised by a combination of popular subscription and public funds. In many cases where the popular subscription method is being employed, the city council or county commission has been invited to subscribe under the same terms as private contributors. In one instance, the total amount to be raised is being divided into three equal parts; one-third will be furnished by the county, one-third by the city, and one-third by popular subscription.

Equipment

As a general rule, the costs of construction and equipment are combined, and the funds for the joint purpose secured at one time. The equipping of the building, however, offers a unique opportunity for special memorial features. Even in the case where construction funds are raised by taxation it may be found desirable to accept popular contributions for a large part of the equipment. Certainly some provision should be made for gifts from those who desire to commemorate fittingly a relative or friend. These gifts may be in the form of money to be used in the equipping of some special room, or in the form of appropriate paintings, or other definite memorial features. If lodges, societies and other organizations desire to recognize the services of their members by special memorials, such an arrangement will be found most practicable. For example, the Camp Fire Girls may desire to raise funds for the construction of a large open fireplace; the local art society may contribute a group of mural painting or appropriate pieces of sculpture.

A special committee on equipment and furnishings should be detailed to develop this feature and co-relate such contributions so as to avoid duplication of effort and insure the proper harmony.

Maintenance

The method of securing funds for construction and equipment will determine to some extent the source of maintenance. Yet other factors will enter, chief of which will be the revenue derived from the use of the building. This in turn depends upon the nature of the building and the purposes to which it will be put.

I. REVENUE FROM BUILDINGS

(a) *Rents.*—If the building is to become the headquarters of various patriotic, civic, art, literary or dramatic societies, the rent charged for office room and the use of the auditorium will largely, if not entirely, solve the problem. Then, too, the various facilities may be rented for special occasions. This will apply particularly to the auditorium for concerts and other public gatherings, the gymnasiums and halls for dancing parties, and the banquet-room for private purposes. In many cases the local chamber of commerce will make its headquarters in the building, and the secretary of this association may serve as general custodian of the building. In other communities the building may be under the control of the local post of the American Legion, or of the local community service organization, where a similar arrangement may work out.

In a large number of cities the community building will doubtless be definitely linked up with the public school program, so as to permit the recreational facilities to serve as a gymnasium for school children. In such cases the renting of the community house to the school authorities will go far toward solving the maintenance problem.

(b) *Fees.*—Fees may be charged for gaming privileges, as, for example, bowling alleys and billiard- and pool-tables. Nominal fees may also be charged for adult gymnasium classes, and use of the tennis courts and other playground facilities used by the grown-ups. As a rule, there should be no direct charge for children, and where the school board does not provide for them, some other means should be utilized.

(c) *Profits and Concessions.*—Many community houses, when conducted by a working organization, will maintain refreshment facilities, such as soda fountains, cigar and candy stands and cafés. In such cases the profits will, of course, be devoted to the maintenance expenses. In other instances these concessions may be sublet to private parties at appropriate charges.

2. POPULAR SUBSCRIPTION

Maintenance funds may be provided or augmented by popular subscription, which may be secured by any of three methods, or a combination thereof.

(a) *Annual membership dues.*—There is a danger in the membership idea, as those who are "not invited" or for other reason feel "left out" may be the very ones most in need of the fellowship and services provided by the community house. By taking special care to make the organization democratic, however, this objection can be overcome.

(b) Some communities are planning to conduct *annual drives* for maintenance funds, similar to the Red Cross and other war fund drives. Such a method, while perhaps serving to keep alive community interest, contains an element of possible risk in that the enthusiasm may wane during the course of years, and some more systematic method may commend itself from a business viewpoint.

(c) The *living endowment* plan is finding hearty endorsement in many cases. Let us explain this method by illustration: Supposing it is found that an annual budget of $5,000 is needed. If money will yield a net 5 per cent interest it would require an actual permanent endowment of $100,000 to provide an annual income of $5,000. To raise such an endowment fund at the time of the drive for the construction of the building is seldom advisable, if, indeed, possible. Again, the existence of such an endowment large enough to support all activities removes from the community house project the element of democracy, as it makes the users of the community house privileges the beneficiaries of those who contributed the endowment. It establishes a patronage that tends to thwart the impulse to pay one's way. None of these objections are to be found in the "living endowment" idea.

To raise $5,000, issue $100,000 worth of living endowment certificates in denominations of from $50 up. These certificates certify that the holder pledges to pay each year for the maintenance of the memorial community house the sum of $——, being the equivalent of 5 per cent interest on the face of his certificate. For example, a $100 living endowment certificate will thus yield $5 a year income for the maintenance fund. Such a certificate may be made "negotiable," so that a holder upon leaving the community may pass on his certificate with its obligations to some friend, notice of such transfer to be mailed to the secretary of the board of directors of the memorial building association. Payment of "interest" may be made annually, semi-annually or quarterly, as indicated.

Blocks of such certificates may be subscribed to by the various societies and organizations, and by business corporations. In this way the community itself becomes the "endowment" and yields the needed income on a systematic self-perpetuating plan. As certificates are canceled for failure to yield the "interest," they may be considered "poor investment," and other certificates issued in lieu thereof. As the community house activities increase and a larger budget is needed, a new block of living endowment certificates may be issued and subscription secured by aid of a short, intensive campaign.

(d) A fourth method of providing for maintenance is that of a regular endowment. In a few communities this method is perfectly feasible and may well be employed to provide at least a large part of the running expenses of the institution. It is quite possible that community houses erected in certain sections of large cities where the population is of a shifting nature would make such an endowment method a practical solution to the problem. Even in this case it is highly desirable that those who use the community house should pay a fair price for most of the privileges, not only as a source of revenue, but as a means of creating and maintaining self-respect and a feeling of independence. Again, instances will be found where wealthy patrons may wish to create an endowment fund as a memorial to individual heroes of the war. In such cases it may be advisable to provide that the income from such endowment be devoted to specific purposes; for example, the maintenance of the recreation field, provision for concert courses, or some other type of definite service.

In conclusion, it seems wise to urge that all problems of finance receive mature deliberation, as it would be most unfortunate if the splendid impulse to commemorate fittingly the principles and heroism of the World War should result in the erection of buildings which will fail to function as fitting tributes to those who served.

The Salaries Paid to Municipal and County Officials

are in most cases grossly inadequate in the light of present-day conditions.

You cannot expect competent management to continue indefinitely on third-rate pay.

What is being done in your community to correct the salary wrongs of public officials and employes?

THE AMERICAN CITY invites correspondence on this subject..

Replanning Boston's Most Congested District

The Recommendations of the Boston City Planning Board for Providing Right Living Conditions in the "North End"

By Elisabeth M. Herlihy
Secretary, The City Planning Board, Boston

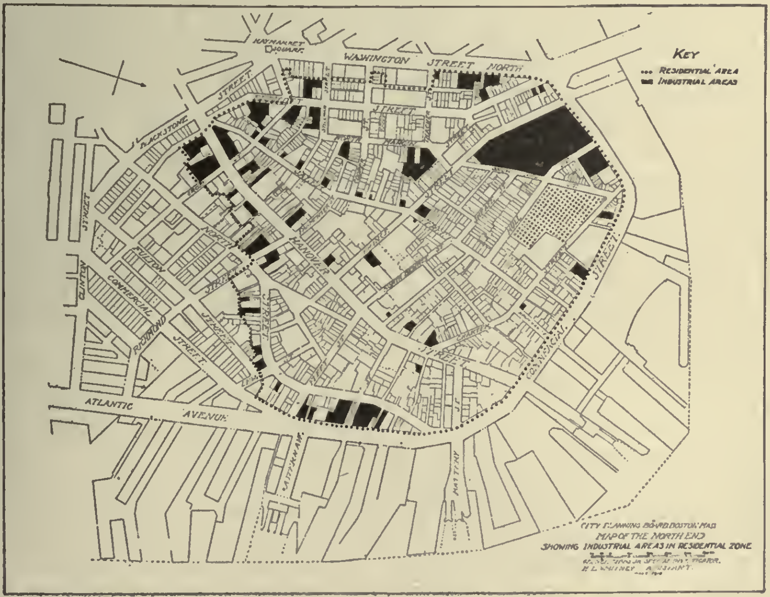
IT is doubtful whether any other municipality in this country has a district so rich in historical associations, so favored in its topographical situation, so cosmopolitan in its population, and withal so unfortunate in its development as is the North End of Boston, a district which was years ago characterized as "the classic land of poverty."

No sight-seeing tour is complete without a visit to this congested section, where one picks his way thru narrow, dark, dirty, damp and ill-smelling alleys, importuned at every turn by eager, scantily-clad urchins who clamor for the privilege of acting as guide to the Old North Church, from the belfry of which flashed the signal lantern—"one if by land, two if by sea"—on that memorable 18th of April, 1775.

The Nature of the District

One of the earliest settled portions of the city of Boston, the boundary lines of the residential district have remained practically unchanged. The encroachments of business and commercial interests have been very slight, while the rate of change in the last half-century, as well as the character of occupancy of the district at the present time, does not suggest any very material change in the near future.

For years the North End has stood as a distinct community of practically one hundred acres, nearly seventy acres of which are devoted to residential purposes. It has a population, according to the 1915 census, of 35,210, of which total those of Italian birth or parentage number nearly 30,000. The area is entirely cut off from all other



MAP SHOWING BOUNDARIES OF RESIDENTIAL ZONE, WITH NON-RESIDENTIAL AREAS

Residential area bounded by heavy dotted line; black represents industrial areas residential districts in and about Boston, with water-front activities on the north and east and commercial industries on the south and west.

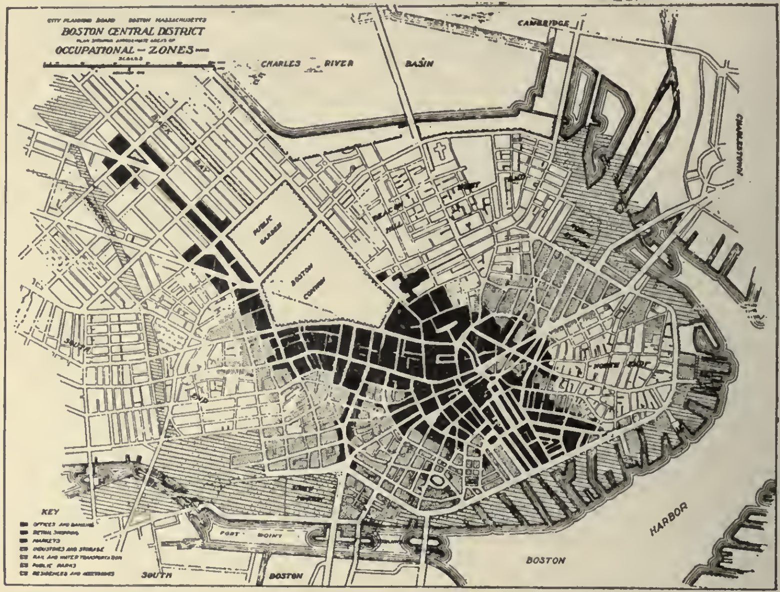
During the early history of the city, and up to the time of the Revolution, the North End was an important residential center, and on the slopes of Copp's Hill—the most important of the hills of the early colony—some of the fine old houses are still to be seen. A series of progressive changes have taken place, however, until now it is chiefly a tenement district, so congested that it has already necessitated much regulation and many costly improvements, but is still greatly in need of wholesale reformation if living conditions are to be made wholesome and agreeable.

The Housing Conditions

With the moving away of many of the old families, a gradual change took place in the district. The buildings were divided into smaller apartments to meet the demands for cheaper rents; tenements were built, and overcrowding resulted both in buildings and on the land. The general tendency at the present time is toward concentrated habitations, covering all available space and extending to five or six stories in height, altho in many of the buildings local retail business is claiming the ground floors. In some places the buildings are almost entirely boarding- or lodging-houses; other sections still contain single houses, but these are gradually giving way to tenements; the hotels are more or less scattered on chance sites; while in the heart of the district there is a veritable civic center where schools, the library, and public open spaces occupy a considerable area.

Housing conditions in the North End have afforded a fruitful field for investigation and reports for years, but the recommendations contained in the recent report of the City Planning Board constitute the first attempt on the part of any agency to solve the problem as a whole, and to restore the North End to its rightful place among residential communities.

The North End of a hundred years ago was built on generous proportions. Large back yards afforded ample space for the exercise of agricultural tendencies brought by the early residents of the district; but the population changed; the back-yard gardens gave way to unrestricted building, until within the space of a century practi-



MAP SHOWING THE EXISTING DOWN-TOWN ZONES IN BOSTON

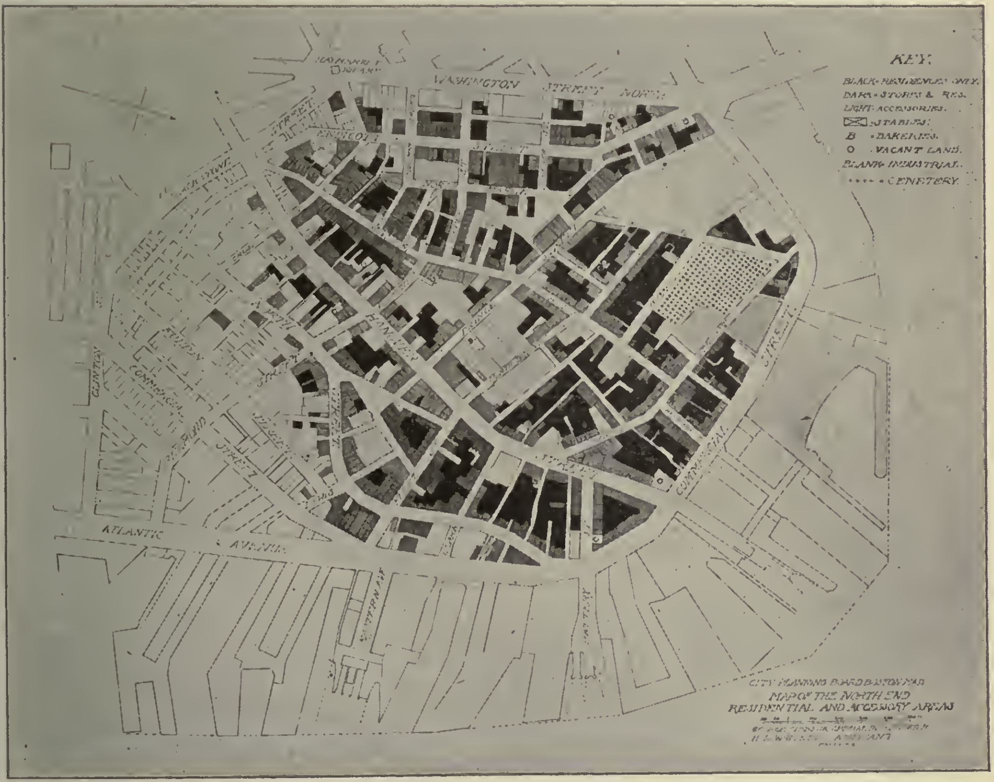
Black—offices and banking; hatched—retail shopping; cross-hatched—markets; dotted—industries and storage; hatched and dotted—rail and water transportation; white—residences and accessories cally every available foot of land was closely built over. This development, or mis-development, is clearly shown in the plan of the City Planning Board for the widening of Greenough Lane.

This block might be considered a typical illustration of the rear lot problem as it exists in the North End to-day, which was found to be the most serious phase of the whole situation.

In its investigation the Board assumed that a lot 60 feet in depth, fronting on a street of reasonable width, with a small rear yard, could be built over in such a way as to provide wholesome living accommodations. In the rear of lots in excess of 60 feet in depth, there are large areas of land in which now most of the seriously menacing conditions in the North End are to be found.

In the illustration on page 110 are shown all the streets 25 feet or more in width, together with the public open spaces, and all back lands more than 60 feet distant. These back lands cover nearly 13 acres, or 13 per cent of the total area of the district, and lie almost wholly within that portion devoted to housing. It is in an attempt to open up these back land areas, and to provide the houses of the district with a reasonable amount of light and air, that the City Planning Board has devoted three years of intensive study to the problem. Much has been done already to legislate against unwholesome conditions, and more can doubtless be accomplished, but as long as the ground plan of the properties is radically wrong, undesirable conditions will continue to exist and will probably increase.

Of course there are poor housekeepers and neglected children in the North End, as there are in every other section of the city, but the real trouble is much more fundamental than the frailties of human nature. People cannot be compelled to live

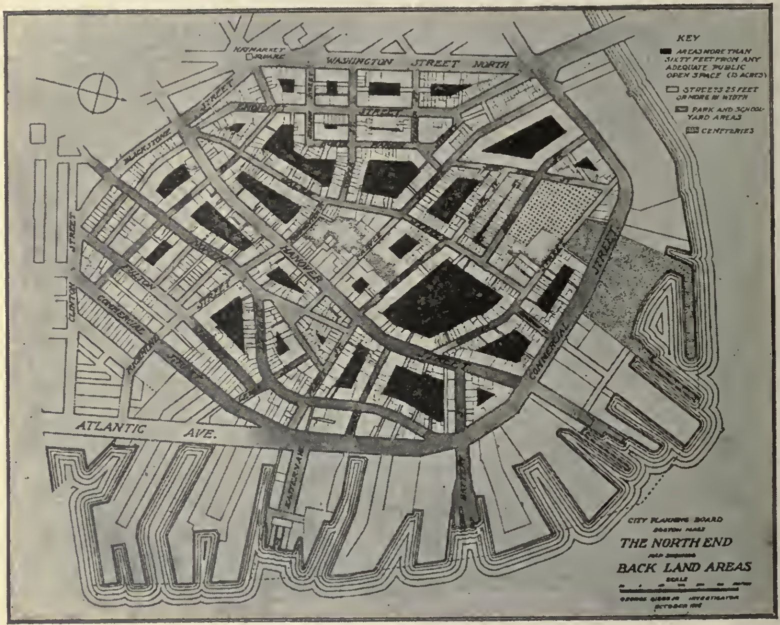


MAP SHOWING AREAS USED FOR RESIDENTIAL AND ALLIED PURPOSES

Black—residences only; dark—stores and residences; light—accessories; B—bakeries; O—vacant land; blank—industrial; diagonal cross—stable; cross—cemetery rightly until right living conditions are available.

The willingness of the people to respond is shown by a visit to the Morton Street District, where a one-half-acre park is being constructed, at an expense of $200,000, in the heart of a block covering about one and one-half acres, and formerly housing over one thousand people. The clearing away of the old houses allowed sunlight to enter many of the adjacent homes for the first time in nearly half a century, and the windows, whose only outlook for years has been on dark and narrow streets, or dismal alleys, are now abloom with plants, thriving in the sunshine which has for years been denied them.

In the general plan for improvements as proposed by the City Planning Board every one of the back land areas is opened up in such a way that, if the recommendations of the Board are carried out, every place of abode in the district will be provided with a reasonable amount of light and air. This "consummation devoutly to be wished" is brought about by means of the extension, widening, or relocating of existing streets, and the creation of a number of neighborhood outing places, little more than breathing spots, for the benefit of the mothers and small children who are unable to avail themselves of facilities at a greater distance, and who are now dependent upon doorways, streets and alleys for their recreation and fresh air.



MAP OF BACK LAND AREAS IN THE NORTH END

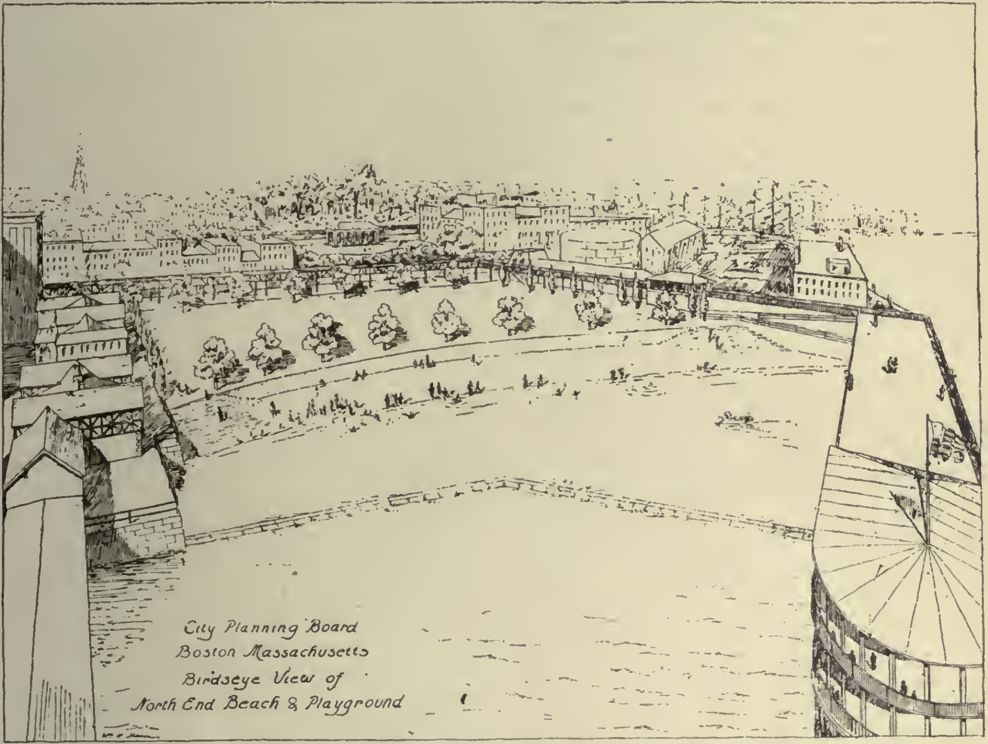
Gray—reasonably wide streets; dotted area—public open spaces; black—rear lands 60 feet or more from such open spaces

Increasing the Recreational Facilities

It is estimated that there are in the district fully four thousand children under the school age, and a total of over ten thousand children under approximately fifteen years of age. The provision of adequate recreational facilities for its children is a serious and imperative obligation on the part of any municipality. The City Planning Board survey shows that while there are nearly eight acres in the North End at the present time devoted to park, playground and beach purposes, about three acres are available only for bathing, leaving a little less than five acres of actual playground space.

The greater part of this area is comprised in the North End playground, located on the water-front, but separated from the residential portion of the district by a broad teaming thorofare, also traversed by electric cars, freight trains to and from the market district, and the Elevated structure. In order to make this playground more accessible, the Board suggests a bridge from the Copp's Hill Terraces, passing immediately beneath the upper Elevated structure and well above the busy street. Such a bridge, while connecting directly with the playground by means of a flight of steps, could also be continued by means of an elevated walk at practically the same grade, to the recreation pier. This would do away with the present danger to children in crossing the street with its numerous car tracks and heavy teaming, and also afford convenient access to the playground and recreation pier for mothers with baby carriages, since the grade is at no point severe.

So far as the bathing beach is concerned, it is estimated that approximately 200,000 persons avail themselves of its facilities during the season; the bath houses provide for 600 or 800 men and as many women, and many of the bathers dress at home. The slope of the beach is such that for six hours out of every twelve there is very little water, owing to low tide, and it is always far from clean. The City Planning Board recommends that this condition be overcome by the construction of a dam near the end of the recreation pier. This would keep the water on the beach at a high mark at all times, and the beach could be maintained and kept clean by a flow of tide water thru controlling inlet and outlet devices.



THIS VIEW OF BOSTON'S NORTH END BEACH AND PLAYGROUND SHOWS ALSO THE PROPOSED BRIDGE CONNECTING PLAYGROUND AND RECREATION PIER WITH COPP'S HILL TERRACES

Another recommendation which would add to the recreational advantages of the district and at the same time serve to properly preserve one of its historical features is the creation of the proposed Paul Revere Park. In the block which contains the Paul Revere House there are several lots of excessive depth, and a number of dwellings on interior lots without proper street frontage or adequate light and air. The Board recommends that certain of these lots be taken to form a small public park, thereby affording adjacent buildings an attractive outlook, and lessening the fire risk in connection with the Paul Revere House itself, which has been preserved by an historical society.

A New Main Thorofare

Of the specific recommendations contained in the report, the major improvement is that of a proposed main thorofare directly connecting the wholesale market and cold storage warehouses with the Charlestown Bridge. At the present time, produce teams coming and going to the northern part of the city and the districts beyond become delayed and congested on the narrow streets thru which they now have to pass. From every point of view this proposed main thorofare follows the line of least resistance. The route lies along the line of easiest grades, and falls almost exactly on the line of demarcation between high and low property values in the district. Other possible routes to the northeast and to the southwest were discussed, and were rejected in favor of the plan proposed. To the northeast steeper grades would be encountered for a portion of the way, and there would be interference with the present grouping of playground, schools and gymnasium, as well as various traffic complications. To the southwest, property valuations are much higher, and the cost of construction would be increased, as the distance over such a route would be longer. Also, the proposed street line includes streets that already exist, such as Parmenter, Richmond and Endicott Streets, so that for the greater part of the way it means no more than the widening of streets already determined.

What It Will Cost

In figuring the cost of the entire improvement, there were taken into consideration the assessed values of the properties involved, the additional costs for taking, construction costs, and the loss in taxes during the period of reconstruction. Against this probable gross cost of the undertaking, there should be reckoned the possible revenue from the assessments of betterments, from the sale of lands after improvement, from the sale of buildings, and the increase in tax returns. On this basis, the net cost of the improvement is shown to be $2,324,502, over one-half of which is involved in the construction of the proposed main thorofare.

It is planned that some of these takings shall be made under the law of excess condemnation, which was accepted by a large majority of the people in 1911 as an amendment to the Constitution (Article 39), altho as yet practically untried.

As a further credit against the net cost of $2,324,502, there are a number of factors which, altho impossible to estimate in dollars and cents, nevertheless have a very appreciable value in their relation to any community. If the improvements are carried out as planned, the provision of light and air will yield a return in health and morals which is incalculable; street traffic thru and about the district will be greatly facilitated; and a number of small neighborhood play-spaces will have been established which will go far toward furnishing the youth of the district with convenient opportunity for healthful recreation.

As has been stated, the population of the North End, according to the latest census, is 35,210. The value of real estate within the same area is about $32,000,000. Of this amount, nearly $3,500,000 is withdrawn from taxation as city-owned property, including schools, library, fire and police stations, together with religious and charitable institutions. The investment in recreation facilities in the district totals nearly another million dollars; and while the City Planning Board does not claim that all the improvements represented by this further appropriation of two and a quarter million dollars should be put into immediate execution, it does believe that the entire plan, if adopted to be carried out as opportunity offers, will be justified by the improvement in living conditions over which the city is the official guardian, and upon which the welfare and prosperity of the municipality depend.

The Building of the Municipal Docks at St. Louis

City and Federal Governments Cöoperate in Pròviding Better Waterway Transportation

By M. Serkes

Assistant Engineer, Department of Public Utilities, St. Louis, Mo.

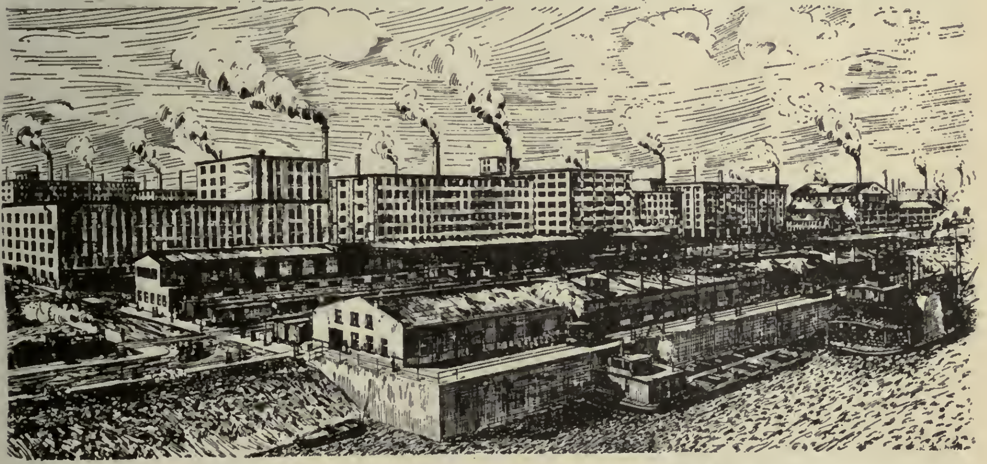
WHEN the great war began, it became evident that the railroads had more freight to carry than they could handle, and the collapse of the system seemed inevitable. A cry was heard from all parts of the country to utilize the waterways to relieve this situation. With this in view, the Government appropriated $18,000,000 for the purchase of equipment for use upon the Mississippi River and for the benefit of St. Louis, provided the city would coöperate by building proper docks and terminals.

To meet this demand, the city of St. Louis has taken up the construction of docks and river terminals with the idea of opening up the river and making St. Louis an inland port, connecting with Cairo, New Orleans, and all the great seaports of the world, so that raw material and manufactured goods from the interior of the United States can reach the outside world by water navigation.

The Site and Its Preparation

An investigation for a dock site was made by the city along its municipally-owned river front, and of the six sites suggested, the section opposite North Market Street was chosen. This location is very close to the business district, and is surrounded by many manufacturing and shipping concerns and by railroad yards which radiate into South and North St. Louis, the Mill Creek Valley, the Northwest Belt Line, and across the river into Illinois. Here the streets approaching the dock are paved, and have easy grades for wagons and trucks.

The harbor lines at this location were far enough out from the wharf line to give ample facilities for the construction of warehouses, storehouses, and railroad terminals behind the docks, and for the future extension of the dock north or south to North Market Street. Here the depth of the river bed between the inner and outer harbor lines was sufficient to meet the Government requirements, and permission was obtained from the Government to locate the face of the dock half-way between the harbor lines, on condition that the city keep the river bed between the dock face and the outer harbor line clear from obstruc-



SKETCH OF THE ST. LOUIS MUNICIPAL DOCKS AS THEY WILL APPEAR WHEN COMPLETED tions and sediment to a depth of 10 feet below zero on the gauge, so as to enable loaded barges and boats to reach the dock at the lowest stages of the river.

This position of the dock brought the dock wall about 250 feet in front of the river bank, necessitating the placing of about 500,000 yards of fill, upon which warehouses and railroad tracks could be built. In order to hasten this fill, the dumping of city dirt and refuse was encouraged, and two wooden pile dikes were immediately constructed, about 150 feet and 900 feet, respectively, north of the dock site. The dikes start at the river bank and extend out into the river at right angles, terminating on a line with the face of the dock. The spring floods of 1917 and 1918 deposited about 150,000 yards of sand and mud behind the dock site, and the remaining amount is being rapidly filled in by public dumping.

The dikes were built of timber piles from 30 to 60 feet in length, and driven to refusal or a maximum penetration of 20 feet; they were driven at such spacing that they could be drawn together and tied with ½-inch galvanized wire and spiked, forming a cluster of three piles; these clusters were spaced 10 feet on centers and framed together, making a solid dike.

To prevent the river from scouring under and washing away the pile dikes, a mattress, consisting of 1-inch boards, was woven and spiked together upon the barge, then pushed off the barge into the river as the mattress advanced in construction. It was held in place by cables to the bank. When entirely completed, the mattress was sunk with riprap to the bed of the river. Each mattress was 80 feet wide and about 200 feet long. Upon and thru the mattresses the dike piles were driven.

Another similar mattress, 80 feet wide and 1,000 feet long, was made and sunk with riprap on the river bed, parallel with the face of the dock and extending 10 feet under the face of the dock. This mattress was placed at this point in order to prevent the river from cutting under the face of the dock and undermining the foundation.

The Dock Foundation

The foundation of the dock structure consists of about 2,000 timber piles, driven on 4-foot centers in each direction for a width of 37 feet and a length of 900 feet. These piles were 45 to 50 feet in length, and were driven by means of a steam vulcan hammer and jet to a penetration of 35 to 40 feet, allowing 8 to 10 feet of piling to project above the river bed. They were driven on a batter of 2½ inches horizontal to 12 inches vertical, which placed them parallel with the resultant of the weight of the dock and the bank pressure, thereby eliminating any tendency of the dock to slide forward towards the river. Around these piles, riprap to a depth of from 8 to 10 feet was dropped from a barge, taking care to slope the riprap from the face of the piles in front of the dock. This placed the top of the riprap at 2 feet below zero on the gauge, and left about 2 to 3 feet of piling projecting thru the riprap.

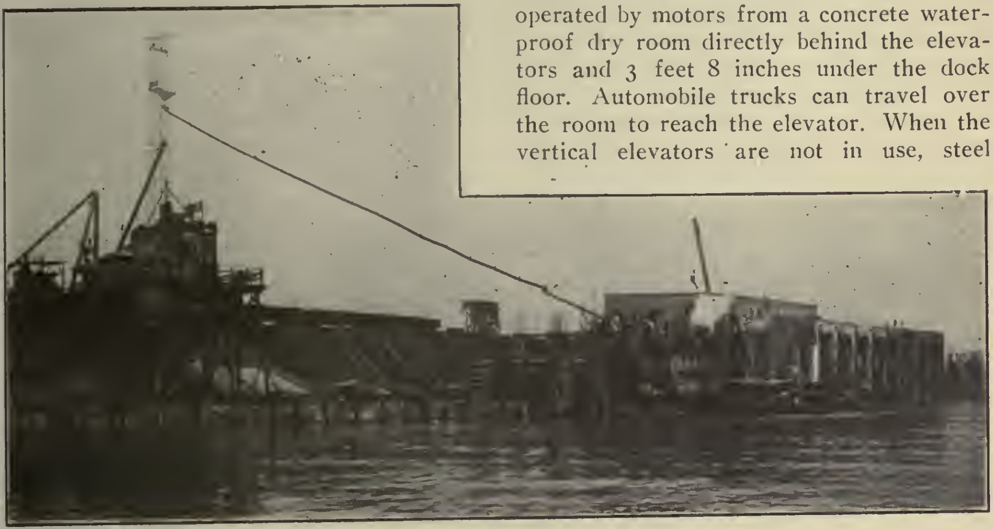
Temporary piles, extending 12 feet above zero on the gauge, were driven along the face, side and back of the dock site, against which wooden bulkheads were placed, 12 to 14 feet in height on the front of the dock and 4 feet on the back, so that the concrete foundation slab could be poured around and on top of the piles projecting thru the riprap. The foundation was poured at various low stages of the river from a mixing plant and steel tower on top of the bank, by means of gravity chutes and bottom-dump buckets, taking care to place the concrete under water without much disturbance. This gave a monolithic slab of concrete 37 feet wide, 900 feet long and 4½ feet high, resting upon and held in place by the 2,000 foundation piles.

The Dock Structure

Upon this foundation slab the dock structure is being built. It consists of a reinforced concrete viaduct 36½ feet wide, 40 feet high and 890 feet long, with bents 20 feet on centers, and the deck or top of "T" beam and slab construction. The viaduct is divided into five units, each 160 feet long, and separated by large elevator openings 22½ feet wide.

Upon this slab, concrete footings, 4 feet x 6 feet and 7 feet high, were poured and bonded to the foundation slab by projecting steel rods. On top of the footing piers rest the intermediate bents, 20 feet on centers. The top of the footings is 9 feet above zero, which enables the superstructure of the dock to proceed in construction when the river is about at this stage. The bents, or superstructure, consist of reinforced concrete arch construction. The 20-foot openings between the bents were designed to permit the fill behind the docks to slope down underneath the face of the dock, thereby partially relieving bank pressure upon the dock structure.

The top of the dock consists of heavy slab and "T" beam construction, extending over eight bents 20 feet on centers, which forms one unit of dock 160 feet long. On top and imbedded in the concrete are six 85-pound rails, bonded together with copper wire bonds in order to provide current for electric cranes. The two outer rails, 34½ feet on centers, are to be used for an overhead traveling crane of the gantry or revolving type, and the four inner tracks (of standard gauge) for the unloading of railroad cars or for the working of revolving cranes.



THE ST. LOUIS MUNICIPAL DOCKS UNDER WAY, SHOWING CONSTRUCTION PLANT

The front of the dock has an arched beam, for appearance and strength, and the back has a partial curtain wall extending down 12 feet from the top of the dock to hold back the fill behind the dock and allow it to slope off underneath to the face. This slope will be heavily riprapped. Openings are being left in the back wall and in the dock floor for the installation of inclined conveyors and shutes. In order to protect the face of the dock from damage by boats and barges, wooden rubbing strips, 12 inches x 14 inches x 35 feet long, have been bolted on to each bent. Spiked ladders have been placed upon these bumpers for travel from boats to the top of the dock. Each unit has twenty-five cast iron cavels on the river side for tying purposes, electric lights, and water connections for the use of boats and fire protection.

The Dock Equipment

Between the units, a space of 22½ feet was left for the installation of large vertical elevators, 18 feet wide and 25 feet long, with a lifting capacity of 15 tons, to enable the handling of package freight and to permit the largest automobile trucks to travel from the street level to the barges, and vice versa. The elevators are to be operated by motors from a concrete waterproof dry room directly behind the elevators and 3 feet 8 inches under the dock floor. Automobile trucks can travel over the room to reach the elevator. When the vertical elevators are not in use, steel girders which have been provided can be dropped into place by a moving crane, and plank floors can be placed between them, thus forming a continuous dock floor for the travel of railroad cars or cranes from one unit of the dock to another.

A wooden warehouse, 60 feet x 128 feet, with a 10-foot platform on three sides, has been constructed 25 feet back of the first unit of the dock, for receiving inbound and outbound freight. This space of 25 feet between the warehouse and the dock was left for the purpose of placing a double railroad track, to enable the handling of freight directly between car and dock without passing thru the warehouse. A double track was placed directly back of the warehouse, for freight that is to pass thru the warehouse or be held for various periods, in order to release cars when barges are not immediately available. These tracks are planked so that wagons and trucks can reach the unloading platforms when the tracks are not in use.

Large warehouses, 200 by 400 feet, of permanent construction, are to be built directly behind the docks, with storage tracks and loading platforms between tracks at either end. Large openings are to be left between warehouses to act as fire-breaks and to enable trucks to reach the ends of the houses for loading and unloading. Storehouses will probably be built some distance back of the warehouses and be interconnected by means of overhead conveyors, so that goods left in the warehouses more than four or five days can be cheaply transferred to storage.

For the handling of miscellaneous package freight and bulk material quickly and economically from warehouse, dock and boat, many mechanical devices are to be installed, such as continuous conveyors, electric storage battery trucks, locomotive and traveling gantry jib cranes, overhead monorail telfers, and overhead wharf cranes. At present, two cranes are in operation upon the dock floor and others are to be installed.

The entire length of dock when completed will be 900 feet, which will give St. Louis the most modern river terminal in the United States. The estimated daily capacity of the dock, now three-fifths completed, will be about 2,700 tons, which can be readily increased by extending the docks to the north or south, as increased business may warrant. One section of the docks has already been turned over to the Government, and weekly sailings are being maintained from both St. Louis and New Orleans, affording shippers a 20 per cent reduction in freight rates. A double railroad trestle is at present being built at the north end of the dock, to enable railroad cars to be switched on the dock floor so as to load and unload directly to and from barges.

This work is being carried on under the direction of James A. Hooke, Director of Public Utilities, with William H. Smith, engineer in charge, and C. E. Smith & Company, consulting engineers, St. Louis, Mo.

Engineering Problems of Regional Planning

By Morris Knowles

Chief Engineer, Housing Department, Emergency Fleet Corp., U. S. Shipping Board

TOWN planning no longer seeks the "city beautiful" alone; its ideals have broadened and deepened until they comprehend all that is implied in that true beauty which consists in the harmonious adaptation of a thing to the needs of human life. And so, from a question of art, town planning has become more and more one of engineering.

Regional planning is still newer as a conscious art. Born in the efforts of neighboring towns to coöperate in the solution of their joint engineering and utility problems, it has developed until to-day its ideals, as applied to regions, are as broad as are those of town planning.

The first requisite of a regional plan is a comprehensive survey of the topography, geography, population, natural resources, agriculture, industry and trade of the region. One result of such study should be a complete topographic map of the area which may serve as a base map for the regional plan. Not only should this map show the topography, and locations of towns, railroads, streams, canals, and other natural and structural features, but the data on natural resources, agriculture and industry should be correlated with it in such a manner that maps may be prepared showing the relative distribution of all the factors affecting the life of the region.

Steam and Electric Transportation

Railroads are the arteries thru which the life-blood of our country's trade flows. Fortunately, the consideration of natural resources, most favorable locations of industries and movements of population which should mold the regional plan has generally guided the self-interest of those who have been responsible for the development of our railroads up to the present day.

The new order that is to be established in the near future, when the railroads are returned to their owners, must provide for avoiding so far as possible the mistakes of the past, and regional planning is an especially timely topic, offering a method by which future railroad developments may be made to conform to a wisely planned conception of the public interest.

Main Highways

The amount of wealth which is produced and which cannot be placed upon the railroad without the intervention of a haul by wagon or truck is vast. Agricultural communities are wholly dependent upon highway transportation for their life. And the growing use of automobiles and trucks and development of interurban vehicular traffic give highways more importance than ever before. But regional planning cannot permit the highways of the future to be located and constructed as have been many of those of the past. The regional plan should provide a highway program harmonious with the programs for the solutions of the other problems of the region, which may serve as a guide for the construction of main highways during a period of years to come.

Water and Sewerage Systems

The advantages of regional water and sewerage systems are often particularly striking, and serve excellently to illustrate the value of the regional plan. The sources in any region, suitable for water-supply purposes, are limited in number and capacity, and a city may do lasting injury to a region by developing its supply without regard for the needs of its neighbors. This was recognized by a state department of health recently, where approval on a joint project for two important cities was withheld until the state had time to investigate thoroly the water resources and the needs of *all* the population within the region.

Sewerage is strictly a drainage area problem, and unnecessary expense as well as mutual damages of many kinds results from attempts to solve it with respect to political boundaries alone. Moreover, the bodies of water into which sewage may be discharged, like the source of water-supply, are limited in number and in oxidation capacity, so that the problem of sewage disposal is also a regional, and not a local, problem.

Not only does the public health require the planning of water systems and sewerage systems on regional lines, but it requires also that they be planned in relation to each other. The availability of sources of water-supply within a region is determined largely by the locations of its sewerage outlets. And the extent and character of sewerage treatment needed to avoid nuisance depend considerably upon the prospective use of its water resources for water-supply purposes.

All these advantages have been frequently recognized in the handling of water and sewerage problems. State departments of health have established supervision of water-supplies and sewerage systems, so as to prevent communities from injuring one another, and to maintain standards within state lines. And many examples exist of joint action by neighboring municipalities for the solution of their common problems.

Stream Regulation

Another problem for which satisfactory local solutions are obviously impossible and drainage area solutions absolutely indispensable is that of stream regulation and water conservation. Navigation requires a uniform sufficient depth of water thruout the navigable length of the stream. Local flood protection works may actually increase flood heights above or below them. The best utilization of water-power requires that its development and distribution be based on regional, and not on local, considerations.

A diversion for water-power purposes may destroy an important future source of water-supply. Certain types of flood protection works may prevent the utilization of a stream for navigation. Reservoirs may often be utilized for a combination of purposes. And the regional plan will consider stream regulation from the point of view of securing from the water resources of the region, at the lowest cost, the combination of uses which will contribute most to the welfare of the population, and to the solution of their other regional problems.

Light and Power

The type and locations of regional sources of light and power will depend largely upon the characteristics of the region with respect to availability and location of coal, natural gas and hydroelectric power. But the economic advantages of power generation in large central stations need no demonstration in these days of efficient, large-capacity generators and of high-tension transmission. Enlightened self-interest has long recognized this, and the results may be seen in the unification of the gas-supply systems in the neighborhood of every field of natural gas, and in the huge electric central stations and the network of electric supply and distribution lines which characterize every one of our large urban districts.

Organization

Organization for carrying out the works of a regional plan is not solely an engineering problem. Existing political organizations must, of course, be the basis of it. The type of organization depends in each case not only upon the existing political organization and upon the area and density of population of the region, but also upon the particular purposes or combination of purposes to be accomplished. Most of the important cases can be classified under one of six headings, as follows:

1. Extension of municipal limits, and consolidation or annexation
2. Extension of municipal jurisdiction
3. Contracts between municipalities
4. County administration
5. Private enterprise
6. District organization

Within a given region each of these types of organization may be represented. But the conception of regional planning contemplates that all of them shall be directed and guided by the regional plan—that the plan shall be a kind of regional constitution with which the subsidiary organizations must not conflict.

Apportionment of Cost

Like the problem of organization, apportionment of cost is in large degree a financial, legal and political problem. But like the selection of organization types also, it is so closely bound up with the use of public works that it is largely an engineering problem, too. In most cases, the method used may be classified under one of four headings, or as a combination of more than one of them.

General taxation.—This would provide simply that the portion of the cost of works so paid would be disbursed out of the funds of the region, state or nation and assessed upon taxable property, real and personal, or upon incomes, by the proper authority, in the same manner as that in which all other taxes are assessed. It would be applicable only to the portion of the cost of works chargeable to the general interest, and would normally be confined to the region benefited by the works.

Special assessment.—The theory underlying special assessments is that the property on which they are imposed receives particular benefits and that general taxation for such purely individual purposes is unjust. Any community, individual or land that receives a particular advantage should pay for it in proportion to the benefit derived. It is evident that no fixed rule can be established to cover distributions of the expense of large public works, such as we are interested in. Also, there should be no assessment in case no benefits are derived, and, as has been held by some court decisions, "burdens in excess of benefits * * * must be borne by general taxation."

Rates.—This method of apportioning cost is applicable especially to public utility services, like steam and electric transportation, light and power systems, and joint water-supply and sewerage systems. Their determination, so as to fairly apportion the necessary gross revenue, is an intricate economic and engineering problem, and public supervision by utility commissions is required to make sure that they are maintained at a reasonable level.

In summary, it may be said that the great engineering problem of regional planning is the comprehensive planning of all of the features with consideration of their relation to one another, so as to secure the greatest good at the lowest possible cost.

Acknowledgment.—From a paper read at the eleventh National Conference on City Planning, Niagara Falls, N. Y.

The Municipal Asphalt Plant of the District of Columbia

The Record of Operation for 1918, with Cost Data

By C. B. Hunt

Engineer of Highways, Engineer Department, District of Columbia

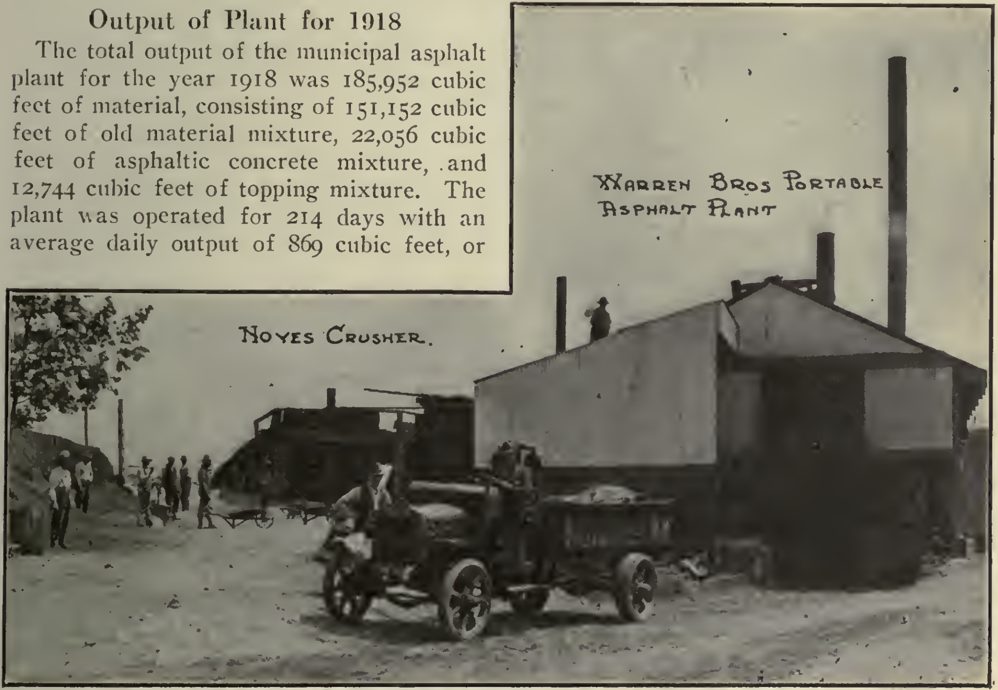
THE municipal plant of the District of Columbia began operation in 1912. During the first three months repairs were made by contract, and for the last three-quarters of the year and continuously since that time all repair work has been done by the municipal plant. The marked reduction in cost for 1917 was affected very significantly by the law effective that year by which repair of pavements over one year old is chargeable to repair appropriation instead of being paid for by the paving contractors under a five-year guarantee, as formerly. The yardage of pavement over which the repairs by the municipal plant were distributed was thus increased by nearly 700,000 square yards on which practically no expenditures were needed, as the pavements were only from one to five years old.

Output of Plant for 1918

The total output of the municipal asphalt plant for the year 1918 was 185,952 cubic feet of material, consisting of 151,152 cubic feet of old material mixture, 22,056 cubic feet of asphaltic concrete mixture, and 12,744 cubic feet of topping mixture. The plant was operated for 214 days with an average daily output of 869 cubic feet, or an increase of 132 cubic feet in the daily output over that of the previous year. In connection with the output of the plant the stone crusher was operated for 101 days during the year, and 3,159 cubic yards of old material was hauled to the plant from the various streets for crushing.

Hauling by motor trucks was introduced during the year, and this innovation in the method of hot haul was found to be both economical and advantageous. About 90 per cent of the hot haul is now being performed by motor trucks which have replaced the old horse-drawn carts and wagons.

Constant attention is given to the maintenance of both the plant and the crusher, repairs being made and parts replaced when necessary, thereby keeping them in the best

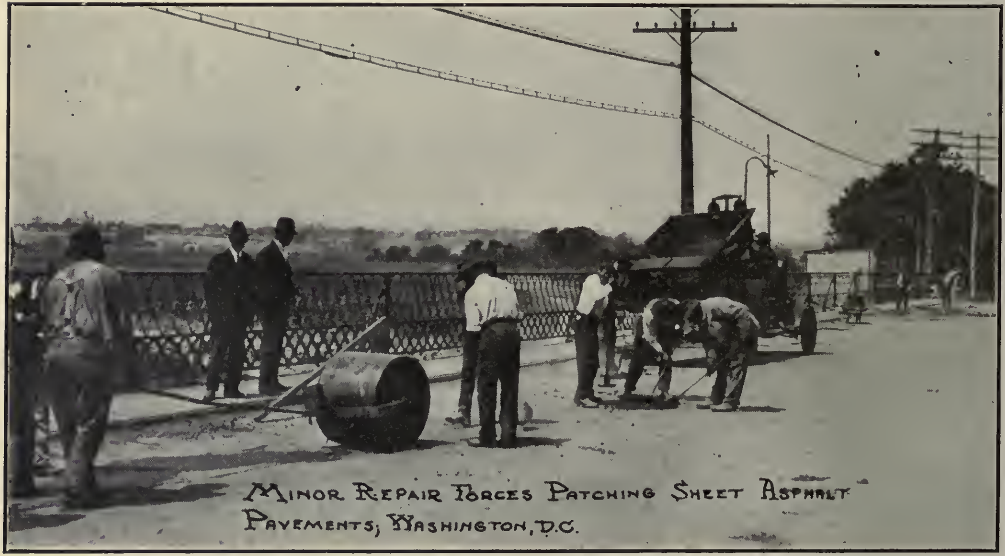


MUNICIPAL ASPHALT PLANT OF THE DISTRICT OF COLUMBIA operating condition possible. This cost is incorporated in the total cost of output shown below.

The following materials in amounts set forth below with unit costs were purchased for use in manufacturing the output during the year:

Sand, 2,675.25 cubic yards, cost	$1.43
Haul of bank sand, 418 cubic yards, cost	1.20
Asphaltic cement, 368.35 tons, cost	19.10
Asphaltic cement, 57.50 tons, cost	26.34
Limestone dust, 250 tons, cost	3.63
Screenings, 500 tons, cost (average)	1.30

The costs of operation, including material and labor, are kept from day to day, and a summary of the data for the fiscal year develops the following unit cost for the year's operation:


Minor Repair Forces Patching Sheet Asphalt Pavements, Washington, D.C.

QUICK, THORO WORK IS THE MOTTO IN THE DISTRICT OF COLUMBIA

OPERATION OF CRUSHER

Period of operation, 101 working days; output of crusher, 3,159 cubic yards. Cost of crushed product per cubic yard:

Labor and material	$0.9523
Repairs to plant	.0888
	$1.0411

The sand used was bought under contract at 59 cents per cubic yard and hauled from the wharf to the plant at a cost of $2,585.57 for 3,093.25 cubic yards, or 84 cents per cubic yard, a total of $1.43 per cubic yard.

The cost of a cubic foot of old mixture is shown in the table below:

0.60 cubic foot of old materials, at $1.05 per cubic yard	$0.0233
0.34 cubic foot of sand, at $0.59 per cubic yard, hauled $0.84 per cubic yard	.0180
2.10 pounds limestone dust, at $3.63 per ton	$.0038
4.12 pounds asphaltic cement, at $19.10 per ton	.0393
Cost of material	.0844
Manufacturing and placing cost	.3685
Total cost per cubic foot	$0.4529

ASPHALTIC CONCRETE MIXTURE

0.50 cubic foot screenings, at $1.30 per ton (2,000 pounds)	$.0331
0.50 cubic foot sand, at $0.59 per cubic yard, hauled, $0.84 cubic yard	.0265
4.20 pounds limestone dust, at $3.63 per ton	.0076
9.16* pounds asphalt cement, at $19.10 per ton	.0875
Cost of material	.1547
Manufacturing and placing cost	.3685
Total cost per cubic foot	$.5232

TOPPING MIXTURE

1.00 cubic foot of sand, at $0.59 per cubic yard, hauled, $0.84 cubic yard	$.0530
4.20 pounds limestone dust at $3.63 per ton	.0076
9.16 pounds asphaltic cement at $19.10 per ton	.0875
Cost of material	.1481
Manufacturing and placing cost	.3685
Total cost per cubic foot	$.5166

The total cost of minor repairs to sheet asphalt pavements during the year, representing the maintenance cost during the year, was $51,493.07. This cost represented the maintenance of all asphalt streets under guarantee by contractors, a total yardage of 3,064,706. The cost per square yard was therefore about 1.7 cents.

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* 10 per cent tare weight.

Chamber of Commerce Buildings—Their Uses and Possibilities

The Seventh and Last Instalment of a Series of Items on the Homes of Commercial Organizations, with Descriptions of Their Club Facilities and Their Uses as Community Centers

Adrian, Mich.—The building occupied by the Adrian Chamber of Commerce was recently presented to the organization outright by Dr. A. M. Stephenson, who formerly occupied it as a residence. With slight repairs, which the Chamber made at its own expense, the building was available for use. It is intended later to remodel the building entirely and include an armory in the scheme.

None of the space is rented to other organizations, altho the Home Service section of the Red Cross maintains offices in the building, and the visiting nurse of the Associated Charities has desk room in it, also a workroom for the repair of clothing donated for local distribution. No rent is charged these organizations.

The Chamber of Commerce occupies approximately 1,000 square feet of space for its work. In this space are the Secretary's office, the Directors' room, the entrance hall, the stenographer's office and waiting-room, two storerooms and a lavatory. There are three rooms not at present being used and not included in the 1,000 square feet that are suitable for committee meetings, etc.

The building is not provided with special social or club facilities, but it is much used as a community center. It is, in fact, thrown open for every kind of civic gathering. There is no regular auditorium, and the meetings are held in the Directors' room.

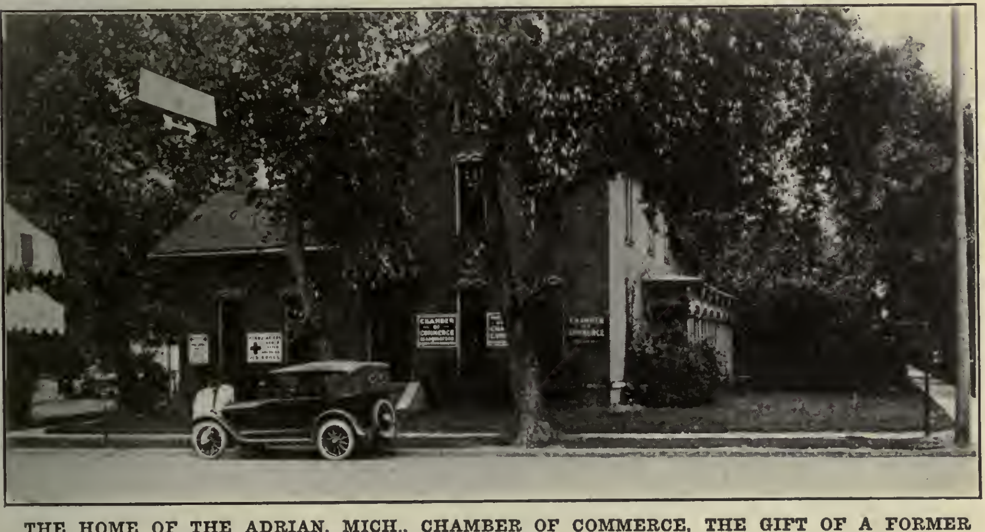
* * * *

Milwaukee, Wis.—The arrangement adopted by the Milwaukee Association of Commerce in the establishment of its present quarters is both unusual and interesting. The Association for many years lived in large office buildings which were only partially suited to its needs. The problem of erecting a home of its own came up for consideration from time to time, and it was a constantly recurring question whether the building should be a club house, with all that such an establishment implied, and the Association continue to conduct serious promotional activities, or whether it should be a well-equipped commercial organization building with club facilities. The organization felt the need of a suitable auditorium which could be utilized for noon luncheon meetings, also of smaller dining-halls for committee luncheons, but it did not feel that an organization that concerns itself with the economic and civic progress of the community should divert its energies to kitchen and dining-room troubles, billiard and bathroom regulations, etc. An arrangement was finally decided upon which made this unnecessary and at the same time enabled the Association to supply its members with all needed club facilities.

The Milwaukee Athletic Club, which was also housed in an office building, had reached the period in its career when a properly equipped club house was required because of the increasing demands for such facilities as it had been offering to the public. The club was not strong enough, however, to finance a large building enterprise without assistance. Whereupon, the Milwaukee Association of Commerce agreed to join hands with the Athletic Club in the construction of a building designed to accommodate both organizations. The result was the twelve-story club house illustrated herewith, which was erected at a cost of $750,000 on a corner lot valued at $200,000.

The Athletic Club financed the undertaking by issuing bonds for the amount of money required, 90 per cent of which were taken by the members of the Association of Commerce. The ground floor was arranged for stores, and the entire second floor was given over to the Association of Commerce. Under this arrangements the Athletic Club is the landlord and the Association of Commerce a tenant, notwithstanding the fact that the greater portion of the investment is held by the members of the latter organization.

The floor occupied by the Association of Commerce is about 200 feet square, and provides for the various executive offices and bureaus, a directors' room, and an auditorium which will seat 500 people. The space was planned by the Association of Commerce with a view to meeting its needs and facilitating its operations. The Association has a separate street entrance, and the Athletic Club has an entrance around the corner on the other street. The Association is not in any way officially interested in the club life carried on in the rest of the building, and the Athletic Club, on the other



THE HOME OF THE ADRIAN, MICH., CHAMBER OF COMMERCE, THE GIFT OF A FORMER CITIZEN

THE BUILDING WHICH HOUSES THE MILWAUKEE ASSOCIATION OF COMMERCE

hand, is not concerned in the more serious labors and activities of the Association. The majority of the Association's members are also members of the Athletic Club, and the convenience of having the club facilities so accessible is very much appreciated. The arrangement has been in force for over a year and it has worked out most satisfactorily.

The Athletic Club itself is modern in every respect, with its attractive dining-rooms, lounge, reading and rest rooms, billiard- and pool-rooms, plunge, bowling-alley, athletic department, bedrooms, barber shop, and ladies' department. The Club serves luncheons at a stipulated rate for the Association of Commerce in the auditorium and in the private dining-rooms whenever the service is required.

* * * *

Portland, Ore.—The total cost of the eight-story building occupied by the Portland Chamber of Commerce was $453,757 (real estate, $100,375.80; building, $274,081.20; furniture and equipment, $79,300). Its erection was financed by the formation of the Portland Commercial Club Building Association, which issued a series of 6 per cent 30-year bonds to cover the cost of the lot and building. The Association leased the building to the Portland Commercial Club (now consolidated with the Chamber of Commerce), with the understanding that the Commercial Club operate the building, pay all taxes, interest on the bonds, etc., and create a sinking fund for the retirement of the bonds, the title to be vested in the Commercial Club when all the requirements of the lease had been fulfilled.

The Chamber of Commerce occupies the sixth, seventh and eighth floors of the building, a total of about 30,000 square feet of space. The other five floors are rented. Among the tenants are several organizations whose work is allied with that of the Chamber of Commerce, viz., the Portland Rotary Club, the Portland Ad Club, the Portland Automobile Club, the Home Industry League, the Oregon State Chamber of Commerce, and the Employers' Association. One-half of the ground floor is occupied by the State Exhibit Commission for display purposes.

The executive offices of the Chamber of Commerce are on the sixth floor. These include the offices of the Executive Secretary, the Trade and Commerce Department, the Industries Department, the Publicity Department, and the Farm Help Bureau. There is also a billiard-room on this floor. On the seventh floor are the lounging-room and library, the offices of the accounting department, the membership department, the Oregon Development Bureau the check-room, the barber shop, and the ladies' parlor. On the eighth floor is the restaurant, which includes the main dining-room, four private dining-rooms, and the kitchen. The private dining-rooms are used for committee rooms.

It will be seen that ample facilities are provided for the social life of the members. The building does not contain a regular auditorium, but the dining-room and the lounging-room, each of which measures 50 x 100 feet, are used as assembly halls, and they are in frequent demand for meetings of all kinds. In fact, practically all the local civic organizations take advantage of the facilities afforded by the Chamber of Commerce for meeting purposes.

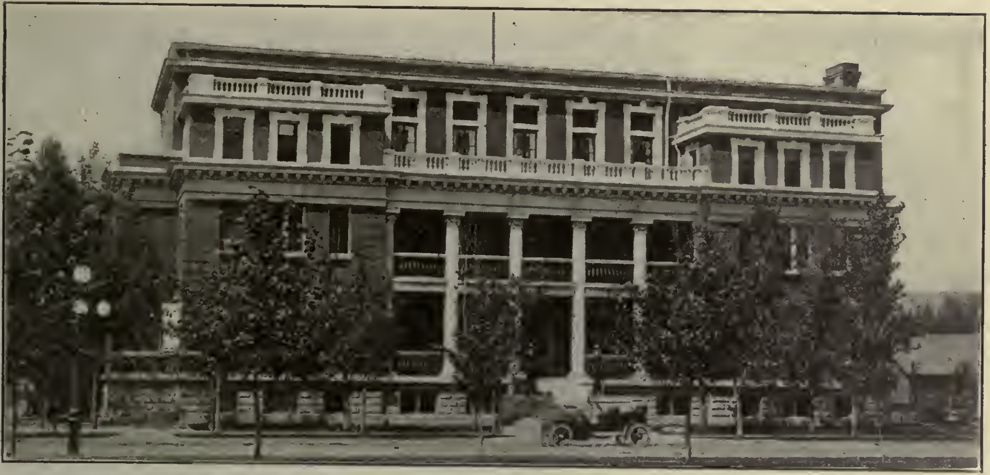
No regular entertainment fund is maintained by the organization. The expense of the entertainment that is extended to the visitors to Portland is paid out of the general fund.

* * * *

Cincinnati, Ohio.—The Cincinnati Chamber of Commerce occupies the second and third floors of the 28-story building which was erected and is owned by the Union Life Insurance Company. The Chamber owns the lot, valued at $600,000, on which the building stands. The interest on this $600,000 gives the Chamber free rental of its two floors, including light and heat, and an annual income of $7,500. The contract provides that at the end of any ten-year period, the lessor will pay the Chamber of Commerce $600,000 upon the latter's vacating the premises.

Two classes of membership are provided for by the Cincinnati Chamber of Commerce,—property-holding and non-property-holding, both paying the same dues of $25 a year. The property-holding member surrenders his equity in the real estate leasehold when he defaults in paying his dues.

THE OREGON BUILDING, CONTAINING THE OFFICES OF THE PORTLAND CHAMBER OF COMMERCE, WHICH OPERATES THE BUILDING



THE HOME OF THE BILLINGS-MIDLAND CLUB, OF BILLINGS, MONT.

The private offices of the President and the Executive Secretary, the general office of the staff, the Directors' room, and the rooms occupied by the Chamber's twelve departments are on the second floor. The exchange hall, which has a seating capacity of about 500, is also on this floor. The dining-rooms, which comprise one large room and four connecting rooms, occupy the third floor. The four smaller rooms are used for the holding of private committee or business group meetings. The dining-rooms provide the facilities for the social affairs conducted by the Chamber of Commerce. Money is appropriated for entertainment as needed.

* * * *

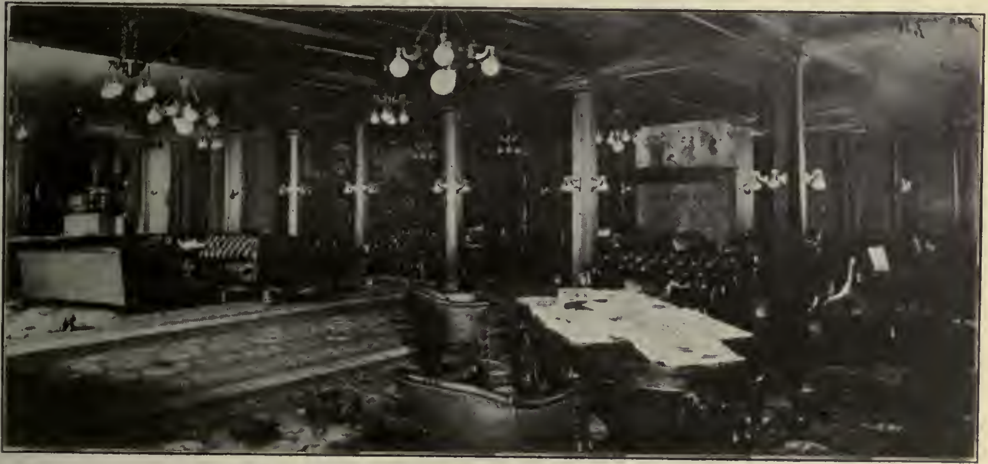
BILLINGS, MONT.—The Billings Chamber of Commerce reorganized itself into the Billings-Midland Club on January 1, 1919, at which time it moved into its new home, the three-story-and-basement building illustrated herewith. It was originally an Elks Temple and had attracted considerable attention on account of its magnificence. The organization serves as the commercial club for nearly two hundred little cities in the Billings territory, which is about 250 miles wide and 350 miles long. The city of Billings itself is situated on two transcontinental railway lines, which have numerous branches, and on two national highways. It is the natural trade and convention center for this immense territory, and the new quarters provide the much-needed facilities for entertaining the great number of business men who continually visit the city.

The building is located in the down-town district. It contains about 22,000 square feet of space. The elegant club dining-room and the kitchen occupy the basement. Two small rooms connected with the main dining-hall are used for committee luncheons and small, exclusive gatherings. The business offices are on the first floor. On this floor are also the main lobby, which is luxuriously furnished, reading-rooms and game rooms, including billiard- and pool-tables, and a ladies' parlor. The second floor contains sleeping rooms; and on the third, or top, floor is an auditorium seating 300 or 400 people, which is used as a convention hall, and for balls and other social functions conducted by the Club. The building with its furnishings cost the Billings-Midland Club $75,000.

The only outside organization housed in the building is the Yellowstone County Organization of World War Veterans, which occupies its space rental free. A slight revenue is obtained from the rental of the auditorium to the Elks and the Commercial Travelers' Association, which use the hall for their meetings.

The facilities for social and club life are infinite in a building of this character, and the widest possible use is made of them. The building also constitutes a real community center. Weekly luncheons for the Club's members are held in the dining-room, and smokers and social functions, including the Club dances, are frequently held on the lobby floor and on the top floor.

The Club maintains an entertainment fund, which is appropriated regularly from the organization's general funds.



THE MAIN LOBBY OF THE BILLINGS-MIDLAND CLUB

Elmira, N. Y.—The two-story frame building herewith illustrated has been leased for a term of years by the Elmira Chamber of Commerce for its work. It was formerly a dwelling house, and was completely renovated and repaired by the Chamber at an expense of $2,100. Everything is as bright and attractive as new paper and fresh paint can make it. The lower floor is used for the executive offices of the Chamber of Commerce, which comprise a general business office, the Secretary's private office, the office of the Farm Bureau, the reception room, and another room used for general office work. On the upper floor is an assembly room that will seat 85 people. This is available for meetings of the Farm Bureau when desired. The Red Cross maintains an office on this floor, and there are two other rooms not yet in use, also lavatories for men and women.

With the exception of the space used by the Chemung County Farm Bureau and the Elmira Chapter of the American Red Cross, the Chamber uses the entire building. It makes no charge to those organizations for the space they occupy. They were given office room as a part of the plan to make the building a civic and social center, and other civic organizations will be housed in it later on. The Chamber also hopes later to open a small restaurant in the building as another part of that plan.

The Chamber of Commerce headquarters and the machinery of the Secretary's office are open to the use of other civic organizations at all times. The assembly room is being used constantly for committee meetings of other civic and commercial bodies. That room will not accommodate large gatherings, however, and the Chamber uses the assembly chamber in the City Hall for forum meetings and other large gatherings.

THE BUILDING WHICH IS LEASED BY THE ELMIRA, N. Y., CHAMBER OF COMMERCE

"Spruce Up"

By Colonel Arthur Woods

Assistant to the Secretary of War

Now that the war is over and the army is being demobilized at unusual speed, a reaction has set in. From a period of great activity we have come to a period of inertia. In many instances there is a reluctance to make needed improvements, to pave streets, to renovate city halls, fire stations, and water-works, to construct new parks, or any of the other numerous municipal improvements that have long been needed and the construction of which has been prevented by the greater need of war-time production. Materials and labor seem high. Perhaps prices may fall. The official and the private individual may say to themselves that "next year is as good a time as this for such construction." But is it?

The beneficial results of an immediate and widespread resumption of public and private improvements will be incalculable. While the paving of a single street may not affect the labor situation, the paving of a thousand streets means a call to labor in the gravel pits, in the machine shops, and in the road oil plants, to say nothing of the labor required to do the work itself. Such municipal activities likewise create a demand for labor in the quarries, in the mines, in the forests and on the railroads. If one storekeeper orders a few new fixtures, it means nothing; if a thousand municipal purchasing agents order new material and new fixtures for cleaning up and sprucing up streets, fire stations, water-works, etc., it means that machinery, lumber, glass, wood, paint and other materials in large quantities will be required to supply the needs.

"Spruce up!" Now is the time to begin.

Automobile Accidents—Their Cause and Prevention

By W. Bruce Cobb

City Magistrate and Associate Magistrate in the Traffic Court, New York City

IN 1913 the New York Court of Appeals, in a celebrated automobile case, wrote as follows: "That the motor vehicle, on account of its great size and weight, of its great power and of the great speed which it is capable of attaining, creates, *unless managed by careful and competent operators,* a most serious danger, both to other travelers on the highway and to the occupants of the vehicles themselves, is too clearly a matter of common knowledge to justify discussion."

In discussing the motor vehicle traffic problem in a recent automobile magazine, a writer commented on the fact that only 679 people were killed in New York City in 1918 as compared with 714 in 1917, 644 in 1916 and 659 in 1915. He then congratulates the police in holding the number of fatalities so well in check. But he does not say that this toll of human life is as low as it can be made nor that it is not all too many for us to be smugly complacent over. Especially is this so when we find that a total of 13,603 were injured in 1918. If we add to these totals the figures in other cities large and small all over the country, are we not moved to ask ourselves if we cannot not only keep in check but reduce the tragic list? In other words, are we doing all we can in every direction? It is not only a problem in policing, but in analysis of causes and in finding a remedy.

Automobile Not Alone to Blame

In the above quotation the Court of Appeals does not mean to suggest, nor, in fact, does any thinking person believe, that because the automobile furnishes the striking force that it is to bear all the blame. We must apportion the blame and apply for a remedy, not in one but in many directions.

Street accidents existed before the automobile, and the advent of the motor vehicle in great numbers only complicated the hitherto existing situation. Pedestrians, horses and wagons, congestion of population, size and layout of streets, volume of traffic in given directions, or to and from common centers—these and many other elements are to be reckoned with.

Relative Rights to Highway

At the outset, let us approach the situation in the historical order of development of locomotion, first the man on foot, then the horse-drawn vehicle, and lastly the self-propelled vehicle, whether on tracks or not.

The foot-passenger still has a legal right to the highway, theoretically equal to that of the vehicle, but woe betide him if he seeks to assert that right in some localities, either urban or rural. Such rights are reciprocal, and to be carefully balanced one against the other according to the circumstances that prevail at the time. But this does not mean that a pedestrian should not in all common sense give way to a large vehicle on the highway, especially if he elects to cross between blocks in a city and not at the crosswalks. But if he does, this only casts on him a burden of greater care from a legal viewpoint. It does not license the motorist or horse driver to omit ordinary prudence and calmly to run him down.

If the pedestrians were at their peril confined to the street corners or certain designated crossings, it might tend to give selfish drivers too great a sense of proprietorship in the highway, not only in small, but large communities. The implied freedom from responsibility on the part of the driver would undoubtedly be misused. Many accidents to pedestrians, particularly to children, are prevented and preventable by the realization of drivers, whether of motor vehicles or not, that some vigilance must be exercised even toward the person who darts obliquely across a crowded thorofare. Especially should this apply to crowded streets and to the use of all streets by the infirm, aged or deaf. Nevertheless, there are certain pedestrian uses of the highway that should be discouraged.

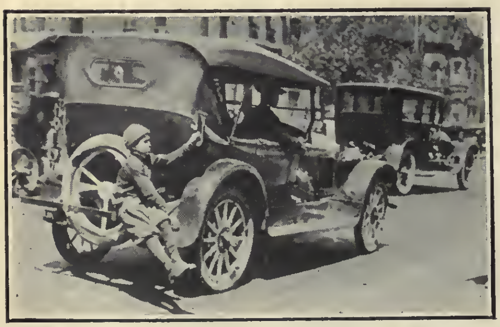
THE WRONG KIND OF TRUCK TRAILER

Streets Unfit for Playground Uses

As a playground for large or small children, even an infrequently used street is not a success. One gentleman, evidently a motorist, recently suggested to me that all parents who let their children play in the street should be fined. If this were done there would not be police enough to make all the arrests or courts enough to impose and collect all the fines. Moreover, it would not be fair until we provide enough playgrounds reasonably convenient to the children's homes, especially those of the poor in our large cities. Much has been done in this direction by parks, recreation centers and blocks roped off at certain hours, but not enough to lessen the peril to any great extent. What heart is so hard as not to freeze with terror at striking a little child, and what accident is at times so difficult to avoid?

No Supervision of Horse-drawn Vehicles

The next user of the highway in order of development is the horse-drawn vehicle. As to this, it is a curious fact that almost anyone is allowed to drive one, especially a small delivery vehicle. In many places small boys do so, tho in other places they must attain the dignity of sixteen years. Horse drivers may be illiterate, speak no English, have no training, know nothing of horses or rules of the road; they may be deaf, dumb, blind, crazy or drunk; and nothing is to deter them from freely using even the most congested highways in our largest cities. This is wrong and should be regulated, since I know that the unfit drivers of horse-drawn vehicles contribute very definitely to accidents both to pedestrians and to automobiles, as well as to other horse-drawn vehicles and to trolley cars. Such persons as well as drivers of automobiles should undergo some sort of selection, be licensed and subject to some sort of control, at least in our large centers of population.



AN INSECURE SEAT—INDICATING A PROBABLE FALL

The Street Cars' Qualified Right of Way

So far as concerns the next user of the highway, the trolley car, confined as it is to rails and with powerful brakes to control and a precious freight of probable suitors for damages, it, too, comes in for some share of blame. In New York there is no law to restrain it and nothing to prevent its reckless operation generally, so far as any criminal statutes or ordinances play any part, unless someone is killed.

Motormen must not only be adequately trained but be made to understand that a qualified right of way because on rails is not to be abused, and that where there are traffic policemen they are to obey their directions scrupulously. Again, in approaching street corners the greatest vigilance is necessary, and interurban cars should moderate their propensity to go fast except where they can do so with real safety—never in the city limits.

The Problem of the Automobile

Finally we come to the lord of the highway itself—that miracle of many shapes and forms—the automobile. At the outset let me voice my faith in the great mass of motorists—chauffeurs and operators—who, after all, represent the great mass of mankind, and therefore number among them good, bad and indifferent—but mostly good. Just as there is the fool that rocks the boat, so there is the idiot who does stunts in an automobile, everything from speeding about in a gaudily painted pseudo-racer to trick driving with one hand, in traffic.

But most of all in this mass of motorists lurk those who, for one reason or another, whether mental, physical, moral or temperamental, are incompetent to drive. These include the persons who are grossly illiterate, reckless, habitual criminals, drug addicts, inebriates (chronic or occasional), feebleminded or partly insane, deaf, of defective vision, over-excitable or nervous, and untrained.

Examination Needed Prior to License

In few states are such persons even partly sifted out by examination or prevented from driving even when their unfitness is discovered, often as the result of some shocking accident. Such examinations should extend to operators as well as to chauffeurs, and should include reasonable investigation or certification as to the applicant's character and physical and mental condition; tests as to skill and elementary mechanical knowledge of the car to be driven; a knowledge of rules of the road and of the laws and ordinances affecting the community where the applicant is to be licensed.

Safety First Campaigns Essential

Having done this, there must be a campaign of education which must emphasize the most common causes of accident. First, of course, speeding is to be considered; for it is axiomatic that the greater the speed, the greater the lack of control or ability to stop quickly or maneuver in emergency.

Next let the necessity for caution at intersecting streets be observed, since my experience in handling thousands of cases indicates this as a most fertile source of accident, especially to other vehicles. It is coming to be the rule that a driver approaching the intersection of a street or public road shall grant the right of way at such intersection to any vehicle approaching from his right. In some communities a driver on a main road or artery of traffic has such right of way over those approaching from side streets or roads. In New York City, where nearly all the main streets run north and south, this has found expression in the rule that all north- or south-bound traffic shall have the right of way over the east- or west-bound traffic.

Turning corners quickly or improperly, especially without a visible or audible signal, is fraught with peril both to pedestrians and vehicles. Then, of course, other vehicles must be passed to the left, except that street cars must be passed to the right and far enough away not to jeopardize passengers seeking to board them.

CHILDREN MUST PLAY, BUT THE STREET IS NOT THE PROPER PLACE

It would seem unnecessary to urge, especially on city streets, that drivers should keep to the right, but in New York City it is one of the requirements disregarded with apparent frequency in the feverish haste to get thru traffic, especially around street cars.

Then there is the use of the horn. All freak horns, especially those that frighten or startle, should be sternly discouraged. Horns should be blown always when safety to one's self or to others requires, but not incessantly.

Contributing Causes of Accident

Finally, indirect or contributing causes must always be considered by prudent drivers. These include weather conditions, such

BALL PLAYING IN THE STREETS INVITES ACCIDENT as wind, rain, fog, mist and sleet, as affecting both the vision and the condition of the road. There is a condition of the road as to material, state of repair, car tracks, gradient, curves; also lighting both of the automobile and of the street. Again, there are mechanical causes that contribute, such as poor brakes; lack of tire chains, especially with certain types of tires; length or shortness of wheel base; weight of car in relation to its speed; and a host of others.

Thoughtless drivers include both the novice and the experienced. Driving by novices should be strictly regulated and allowed only when the learner is accompanied by an experienced person. Young people are often lacking in consideration and seem to have no sense of their responsibility. Students, delivery boys and the like are common illustrations. I have even seen a young matron, on a country road, with a "flivver" load of small children, burning up the miles, oblivious of hops and bumps, with the children complacently hanging over the back seat.

Carelessness Away From Home

Let me comment on the tendency of many drivers to "let loose" when out of their own bailiwick. This happens only too often when a city driver gets out into the country, and often into another state, beyond the fear and control of his own strict laws and policing.

On the other hand, the rural driver with open and more or less unfrequented roads, is often prone to throw rules of safety to the winds, especially as to turning, coming out of intersecting roads and the like. Further, a prudent driver, used to the country, ofter becomes helpless and confused when subjected to the intricacies and emergencies of congested city traffic.

In conclusion, let me lament the road hog who speeds by spurts, passes when and how he can the other vehicles, and generally selfishly ignores the rights and safety of others. And note it well that he is the first to loudly denounce others whenever an accident or trouble arises and invariably essays to bluff out the situation.

As to remedies, beyond proper licensing, strict enforcement of law must be required, not only by police and constables, but on the direct complaint of decent motorists and citizens. Most flagrant violations occur beyond the eye of the police. Reliable records should always be kept of previous offenders.

The Knight-Wheelock Bill

The recent enactment into law of the so-called Traffic Court Conference bill known as the Knight-Wheelock bill, is a notable triumph for the advocates of safer streets in New York City. Tho the bill was considerably altered from the original draft in its progress thru the Legislature, especially in confirming the licensing and examination of operators in New York City as opposed to the whole state, it is none the less the most progressive piece of automobile legislation in New York since 1910.

As in Massachusetts, Connecticut, New Jersey and Maryland, an operator or owner, like a chauffeur, must submit to a qualifying examination. Experience shows that the theory that because a man is responsible enough to own a car he will therefore run it carefully has signally failed. Such immunity to owners and their families is an invitation to the inexperienced and the reckless, and the absence of a license means that the authorities, by not being able to discipline the driver of it if he prove unfit, have only the hold over him that results from actual conviction and punishment for specific violations of law.

The Knight-Wheelock bill facilitates the suspension and revocation of licenses of operators for cause. It also gives the Secretary of State ample power to conduct a sufficient examination and road test, and to ascertain the applicant's character, habits and physical fitness. It classes false statements and deceits in securing a license as an offense severely punishable. Further, a person desiring to learn can do so only under a permit issued under suitable regulations and only when accompanied by an experienced driver who becomes jointly liable with him for any violations of law

liable with him for any violations of law.

It is to be earnestly hoped that not only will the Knight-Wheelock bill be made state-wide in New York, but that the progressive spirit represented thereby and by the laws of Massachusetts, Connecticut, New Jersey and Maryland may be extended and made nation-wide. In fact, there should be a carefully drawn motor vehicle and traffic law uniform in all states, but still leaving localities with special problems free to make necessary local rules.

Uniform Report Blanks for Illinois Fire Chiefs

Standard Record Book and Inspection Forms Distributed by State Fire Marshal Contain Valuable Suggestions for Local Use

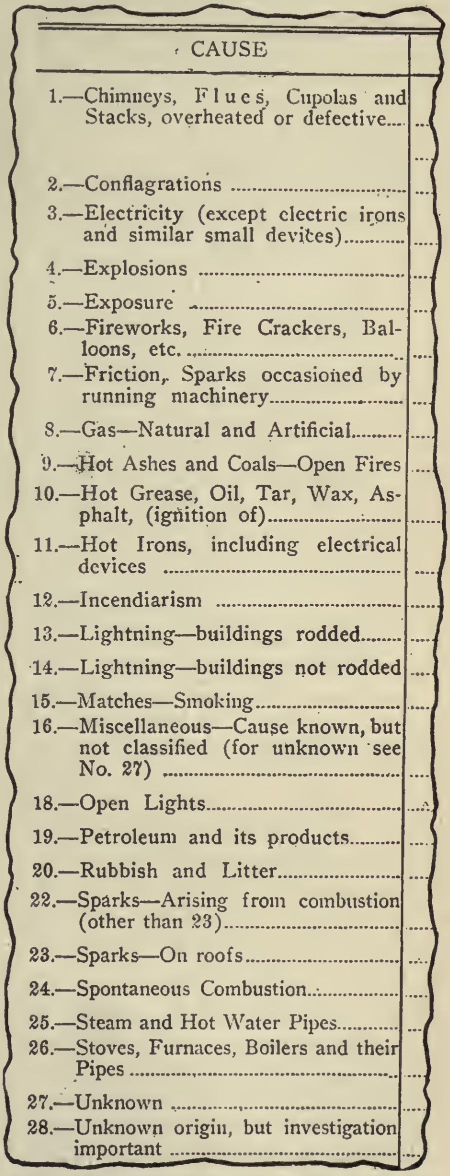
FOR the purpose of having on file in the various communities of Illinois a system of records which will be of the greatest aid in the work of fire prevention, and in order, also, to place coöperation between state and local fire authorities on the most systematic and effective basis possible, State Fire Marshal John G. Gamber has devised a "Yearly Record Book" for fire chiefs, which has been distributed thru the state.

The main purpose of the book is to classify fires as to cause and occupancy as they occur, and thus make possible the keeping of an up-to-the-minute summary. This is accomplished by the use of two forms, one for classifying fires according to cause and the other according to occupancy. The "Cause" sheet or form lists all possible causes of fires under twenty-eight headings. A space is left after each heading. When a fire occurs, the local chief places a cross in the space after the proper heading. Thus a running summary is kept at all times. The sum total of these crosses gives the summary to date at any given time. If the local chief is in doubt as to the proper classification, he may find it in a moment by consulting an extensive index at the back of the book. In the same manner the summary as to occupancy is kept on the "Occupancy" sheet or form. Forty classes of buildings and fourteen classes of property other than buildings are listed.

As a result of this system, if at any time any cause is producing an undue number of fires, or if there are too many fires in any class of property, the fact shows up automatically. It is as a warning signal to the local chief that certain conditions require prompt attention. It enables the State Fire Marshal at the end of each year, or at any time he may desire during the year, to know in just what direction fire prevention efforts may most effectively be applied.

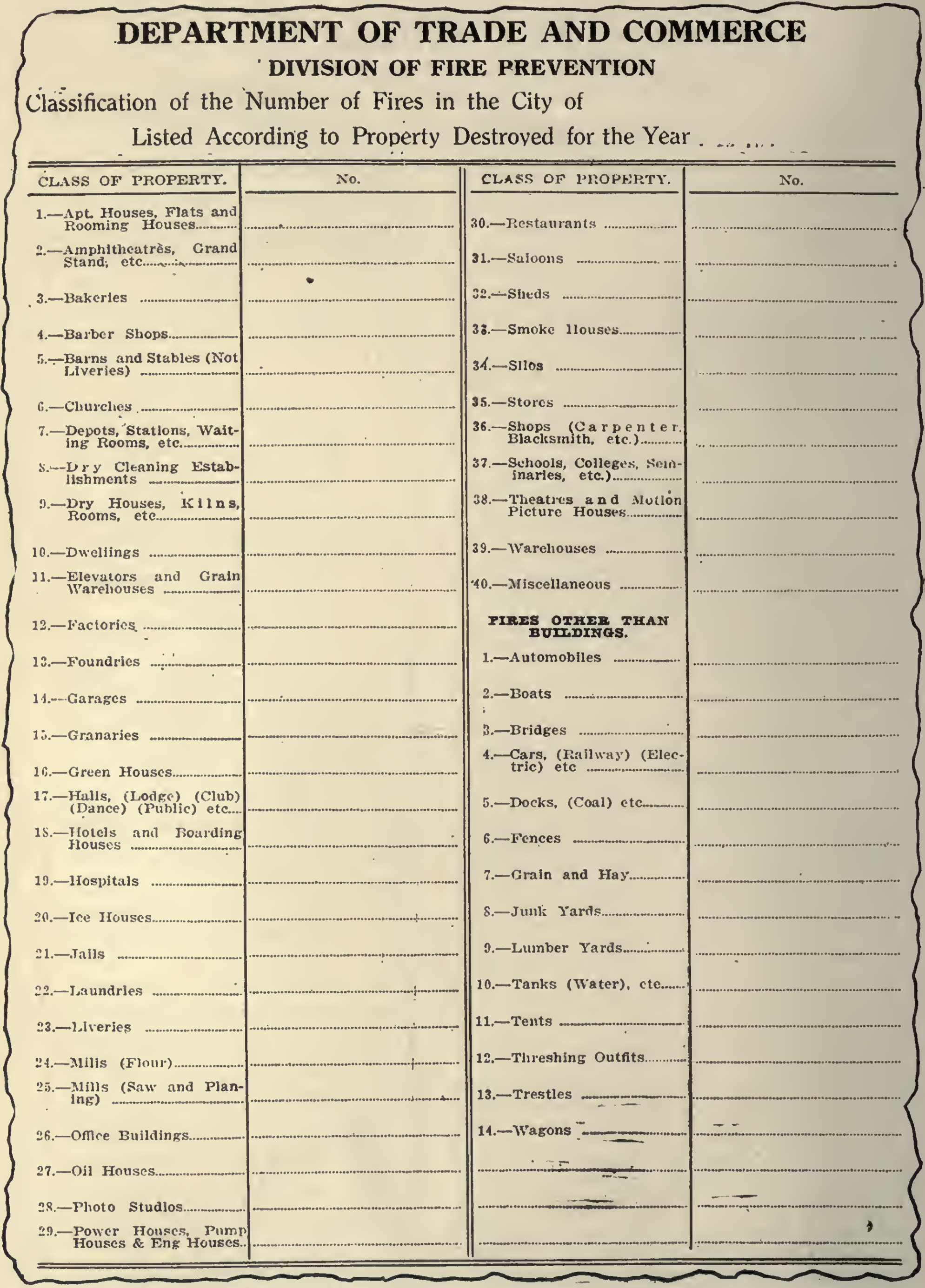
The system insures ease, simplicity and accuracy in record-keeping, plus state-wide uniformity, and there is no delay in making a classification summary when called for.

Fire Marshal Gamber has also inaug-



CAUSE	
1.—Chimneys, Flues, Cupolas and Stacks, overheated or defective....	....
2.—Conflagrations	....
3.—Electricity (except electric irons and similar small devices)............	....
4.—Explosions	....
5.—Exposure	....
6.—Fireworks, Fire Crackers, Balloons, etc.	....
7.—Friction, Sparks occasioned by running machinery........................	....
8.—Gas—Natural and Artificial..........	....
9.—Hot Ashes and Coals—Open Fires	....
10.—Hot Grease, Oil, Tar, Wax, Asphalt, (ignition of)........................	....
11.—Hot Irons, including electrical devices	....
12.—Incendiarism	....
13.—Lightning—buildings rodded........	....
14.—Lightning—buildings not rodded	....
15.—Matches—Smoking........................	....
16.—Miscellaneous—Cause known, but not classified (for unknown see No. 27)	....
18.—Open Lights........................	....
19.—Petroleum and its products..........	....
20.—Rubbish and Litter........................	....
22.—Sparks—Arising from combustion (other than 23)........................	....
23.—Sparks—On roofs........................	....
24.—Spontaneous Combustion..................	....
25.—Steam and Hot Water Pipes............	....
26.—Stoves, Furnaces, Boilers and their Pipes	....
27.—Unknown	....
28.—Unknown origin, but investigation important	....

LEFT-HAND PORTION OF PAGE FOR RECORDING THE NUMBER OF FIRES IN A CITY, CLASSIFIED ACCORDING TO CAUSE



DEPARTMENT OF TRADE AND COMMERCE

DIVISION OF FIRE PREVENTION

Classification of the Number of Fires in the City of

Listed According to Property Destroyed for the Year

CLASS OF PROPERTY.	No.	CLASS OF PROPERTY.	No.
1.—Apt. Houses, Flats and Rooming Houses		30.—Restaurants	
2.—Amphitheatres, Grand Stand, etc		31.—Saloons	
3.—Bakeries		32.—Sheds	
4.—Barber Shops		33.—Smoke Houses	
5.—Barns and Stables (Not Liveries)		34.—Silos	
6.—Churches		35.—Stores	
7.—Depots, Stations, Waiting Rooms, etc		36.—Shops (Carpenter, Blacksmith, etc.)	
8.—Dry Cleaning Establishments		37.—Schools, Colleges, Seminaries, etc.)	
9.—Dry Houses, Kilns, Rooms, etc		38.—Theatres and Motion Picture Houses	
10.—Dwellings		39.—Warehouses	
11.—Elevators and Grain Warehouses		40.—Miscellaneous	
12.—Factories		**FIRES OTHER THAN BUILDINGS.**	
13.—Foundries		1.—Automobiles	
14.—Garages		2.—Boats	
15.—Granaries		3.—Bridges	
16.—Green Houses		4.—Cars, (Railway) (Electric) etc	
17.—Halls, (Lodge) (Club) (Dance) (Public) etc		5.—Docks, (Coal) etc	
18.—Hotels and Boarding Houses		6.—Fences	
19.—Hospitals		7.—Grain and Hay	
20.—Ice Houses		8.—Junk Yards	
21.—Jails		9.—Lumber Yards	
22.—Laundries		10.—Tanks (Water), etc	
23.—Liveries		11.—Tents	
24.—Mills (Flour)		12.—Threshing Outfits	
25.—Mills (Saw and Planing)		13.—Trestles	
26.—Office Buildings		14.—Wagons	
27.—Oil Houses			
28.—Photo Studios			
29.—Power Houses, Pump Houses & Eng Houses			

COMPLETE PAGE FOR RECORDING THE CLASSIFICATION OF NUMBER OF FIRES ACCORDING TO PROPERTY DESTROYED urated a system of coöperating with local fire chiefs along inspection lines which is getting good results. Under the Illinois Fire Marshal's Act every local fire chief is ex-officio a deputy state fire marshal and as such is given broad powers in inspecting and ordering the removal of fire hazard conditions. For use in their inspection work, local chiefs are supplied with uniform official inspection blanks, bearing the signature of the State Fire Marshal and providing a space for the signature of the local chief. Thus the authority of the state of Illinois is placed back of every order served for the removal of fire hazard conditions. This not only increases the zeal of the local chiefs, but also has a strong effect upon the person served with the notice.

The orders are issued in triplicate. One is given to the person served, one is kept by the local chief and one goes to the State Fire Marshal. The last-named gives each order the same attention as one served by a regular deputy, files it for later rechecking and gives the local chief all necessary assistance to enforce compliance.

Thru the courtesy of John G. Gamber, State Fire Marshal, Springfield, Ill., The American City is able to offer to its readers complete sample copies of the two forms reproduced with this article, as well as copies of the "Order for the Removal of a Fire Hazard Condition."

More Municipal Comfort Stations Needed

PUBLIC comfort stations in Europe are as much a part of the community service as pavements and street lighting. They are built by city and town administrations and located not merely in parks but on the streets, under sidewalks and public squares, with proper provision for both sexes, and are kept clean by attendants. In contrast, the history of the public comfort station in this country shows that the appreciation of the need of such institutions has grown very slowly. In many cities of the United States public comfort stations are located only at great distances from each other and in inaccessible places, and often with no provision whatever for maintaining them in a sanitary condition.

Municipal officials thruout this country must awake to the new problem confronting them. With the abolishment of the saloons, which have provided most of the comfort stations for the men of the American community, there comes a great need for the immediate and general installation of such accommodations. There should be no such delay as in the case of one comfort station in New York City, which was built to serve a district at least a mile square with many thousands of people. This station was fourteen months in building, and four months more elapsed before it was opened to the public.

American communities must undertake immediately to provide satisfactory public conveniences as a substitute for the accommodations of the saloon. Stations, with attendants, should be provided for each sex, inasmuch as most of the comfort stations for women in our cities are maintained by hotels and department stores. Clean accommodations must be established wherever needed, and could probably be made partly self-supporting thru the addition of pay shower baths, sale privileges for merchandise, etc. Many of the comfort stations for women in stores have developed into veritable clubs for customers, with parlors, rest rooms, information booths, and writing rooms. It would probably be difficult for a municipality to develop such elaborate facilities; however, departments of health and public safety must seriously consider the immediate provision of a sufficient number of public comfort stations to fully take care of the situation.

San Francisco has already appreciated the necessity for the establishment of more comfort stations, and in the budget which is under preparation an appropriation of about $50,000 is asked for this purpose. M. M. O'Shaughnessy, City Engineer, who asked for the appropriation, sought to secure money for only ten stations to begin with, realizing that it would be impossible to obtain money immediately for all that are needed and must eventually be built in San Francisco.

Every American municipality should follow the example set by San Francisco and secure an immediate appropriation for the construction of public comfort stations, particularly in the most congested districts. Additional stations should be erected as fast as money becomes available.

One of the World's Great Public Playgrounds

How Point Defiance Park, Tacoma, Wash., Is Serving the Public

By George Lewis Gower
Secretary, Metropolitan Park District, Tacoma, Wash.

POINT DEFIANCE PARK is a high, wooded, triangular peninsula jutting out into the waters of Puget Sound. It rises above the water nearly 100 feet at the lowest level and 315 feet at the highest level. Its water faces rise abruptly at sharp angles from the three miles of salt water beaches, and from the high levels the views in every direction are astonishing and inspiring. To the east, the snow-capped peaks of the Cascade Ridge, with Mount Tacoma (14,408 feet) as the central figure, stand out distinctly. To the west, the Olympic Range, also snow-capped, with Mount Olympus (10,000 feet) as the highest, is even more distinctly visible. And between, a beautiful panorama of forest, field, island and sea meets the eye.

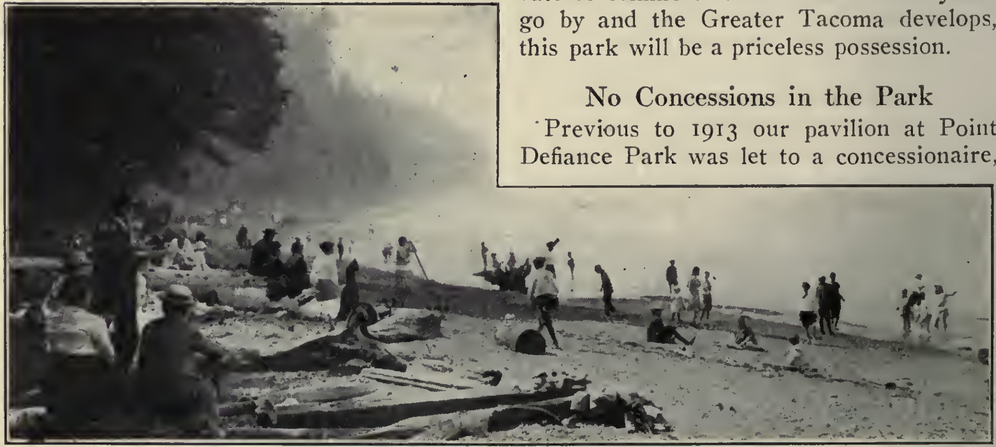
The park area of 638 acres is covered with its ancient natural forest, with trees reaching up 200 feet and frequently 30 feet in circumference. Thru these wonderful woods run seven miles of driveways and some ten miles of paths and trails, with partially cleared picnic ground areas at intervals. The Park Board's purpose is to preserve the forest in its natural state, with sufficient roads and trails to open it to public use and enjoyment.

In the southeast corner perhaps 150 acres are cleared and beautified for a modern park, with drives, paths, flowers, animal house, pheasantry, conservatories, corrals for buffalo, deer, elk, ostriches and other animals; pens for black and grizzly bears (above ground); a duck pond, a lake, and a great picnic ground, with acres of rolling lawns, as framework for them all. The city street railway runs to a beautiful brick station (costing $33,000) built on Japanese lines, near the center of this modern portion. The fare is seven cents for distances up to fourteen miles, with free transfers all over the city.

This park was an old U. S. military reservation, which accounts for its escaping the axe of the pioneer and home builder, while still within the city limits. It was granted by act of Congress to the city of Tacoma for park purposes. Subsequent state grants of the shore rights completed the city's possession, and assured future protection from all encroachments by private or commercial interests. As the years go by and the Greater Tacoma develops, this park will be a priceless possession.

No Concessions in the Park

Previous to 1913 our pavilion at Point Defiance Park was let to a concessionaire,



A TYPICAL BEACH SCENE ON THE EAST SHORE OF POINT DEFIANCE PARK, TACOMA, WASH. —ALMOST ANY SUMMER DAY—ABOUT 100 YARDS NORTH OF THE PAVILION WHARF

ONE OF SEVERAL CONCRETE "OVENS" IN POINT DEFIANCE PARK, BUILT FOR THE CONVENIENCE OF PICNICKERS AND TO HELP WARD OFF THE DANGER OF FOREST FIRES CAUSED BY CARELESSNESS

and we experienced all the inconveniences of high charges, indifferent service and public dissatisfaction. On the expiration of that concession, the Board of Park Commissioners took the affair into its own hands. A salaried manager was employed, who, while being always under the immediate direction of the Board, was given a pretty free hand to demonstrate the possibilities of the service and his ability to handle them. To maintain his interest still further, he was given the opportunity to earn a bonus, which might reach a maximum of $50 a month in addition to his salary, and which could be earned only by showing a net profit over all expenses and depreciation charges. In such case this net profit is divided with him, up to the maximum stated. For example, if the net profit for the year is $300, he gets $150. If it should be $1,500 he would get his maximum of $600. He is allowed to purchase—that is, issue requisitions for—all merchandise which he sells, but he is under the Board's direction even in this, should the Board see cause to direct. He is not allowed to pay out any money whatever. All his receipts go into cash registers, and are brought in to the Secretary, who receipts to him for them. The Secretary receives, audits and pays all the bills.

This system was in operation from February, 1913, to April 1, 1917—a time sufficiently long to fairly demonstrate the wisdom of the plan. A later Board abolished the bonus, and a straight monthly salary is now paid, and prices have been increased.

Business in 1917 was: gross receipts of pavilion, $16,540.10; of boat house, $7,095.90; total, $23,636.00; net profit, $7,773.60. In 1918, pavilion, $27,967.35; boat house, $10,636.95; total, $38,604.30; net profit, $9,095.99.

If these figures seem to dispute a statement below as to moderate profits, the explanation is found in the fact that as membership in the Board changes from year to year, policies are liable to change also. And the existence of Camp Lewis, near Tacoma (where forty to fifty thousand men were in training, who, with their friends, thronged our parks last year), greatly increased our pavilion business. We do not expect such figures this year.

Park Accommodations

The pavilion is kept open every day in the year for the accommodation of visitors, rain or shine. The theory of the Board is that the pavilion exists to provide park enjoyment for the public, which supplies the funds thru taxation for the upkeep of the parks. As the pavilion activities and all other forms of commercialism in the parks, which number some thirty, are an essential part of the public enjoyment, the Board takes the ground that the public should be supplied with these at the least possible expense and with the best market quality. Hence it provides them itself, at prices which show profit, but not robbery, and the public enthusiastically expresses its appreciation.

Our situation on Puget Sound enables us to make a feature of boating. The pavilion has one hundred and eighty boats, built to our own specifications, which are in great demand. Only lack of space, until we get our new pavilion, prevents us from adding largely to the number. Here the same price principle prevails. Boats (except on Sundays and holidays, when they are required for the general public and the all-day price is $1.50) are 75 cents per day, or 25 cents per hour. And we frequently have them all out, with a long waiting list. System is applied here. The renter signs his name to a numbered card, which is then stamped by a machine, showing time of departure, and placed in a clip on the wall corresponding in number with that of the boat taken out. When the boat returns, the card is stamped again, showing time elapsed and amount to pay, and is then started on its way to the Secretary, to be checked up with the cash turned in.

We have several picnic grounds, scattered thru the forest, provided with fireplaces, fuel, tables and seats, all of which are free to visitors. They can spread their edibles at the pavilion, if they prefer, on the same terms. The pavilion has a cafeteria, selling only sandwiches, pie and coffee, and has also ample space for the peanut, popcorn, ice cream, candy and general goods trade. We make a point of trying to supply anything wanted—fishing tackle, tennis balls and racquets, newspapers, "soft drinks," cigars and tobacco (but not cigarettes); in fact, if we haven't what is asked for, we try to have it the next time it is inquired for.

There are no peddlers, not even our own, going around the grounds, trying to make sales. Not even the photographers are allowed to ply their trade, tho everybody is allowed to take as many pictures as he likes for himself. We formerly maintained at Point Defiance Park a park photographer, also on salary, who was always on duty to supply any demands of the public for pictures. The demand was rather surprising, especially for the picnic parties. But that feature is now abolished. At the Masonic picnic one year there were over 2,200 registered names; at the G. A. R. picnic, over 600; and at the Farmers' Grange, over 400.

We formerly furnished an automobile service, at very moderate rates, either by time charges or for the five-mile forest drive, on which we carried some 5,000 passengers in 1916. That also has been abandoned.

An Organization Without Graft

Perhaps it is only fair to say that we are in a position—as most park people are not—where we can do as we feel best, uncontrolled by any outside authority. This Park District is an independent municipal corporation, levying its own taxes, and expending the resulting revenues, in the forum of its own conscience and judgment alone. There is absolutely no politics in it, nor any possibility of interference by anybody. The judgment of the Commissioners is final on any proposition of park government. The Board consists of five, holding office without pay for terms of five years, one change being made by election annually. There is not an employe in the service who is not directly responsible to the Board, nor one to whom it cannot say, "Take your coat and hop ashore," upon any failure of duty. And there is no appeal from that sentence. We have carefully built up a working force on these lines, based solely on efficiency. Many of our people have been with us ten years or more, and every foreman of parks has begun his work with us with pick and shovel, and worked his way up. Consequently we have comparatively few changes, and no politician comes near us with any requests to "give Jimmy a job." They realized long ago that "Jimmy" wasn't a factor with us.

And perhaps, for a last word, it might be interesting to know the grand total of the results of this general policy. I can only say that we have no bonds, nor interest-bearing obligations, no debts, save current monthly bills, which are paid on the 15th of each month, and a comfortable amount of cash on hand. Our simple budget is used first to keep up what we have in the way of parks, then spend the remainder—saving a margin for contingencies—in improvements. And with this the politicians have no concern. At present we have $28,000 of our pavilion rebuilding fund invested in Liberty bonds. We draw interest, not pay it.

FORWARD STEPS
REPORTED TO THE AMERICAN CITY
BY MUNICIPAL OFFICIALS & DEPARTMENT HEADS

For this department the editors will welcome short articles from city, town and county officials and heads of departments, on subjects of interest and practical value to others engaged in similar work. Photographs, plans, or other illustrative material, should accompany the articles whenever available.

MAYORS

Time-Saving Machinery for Tax Records

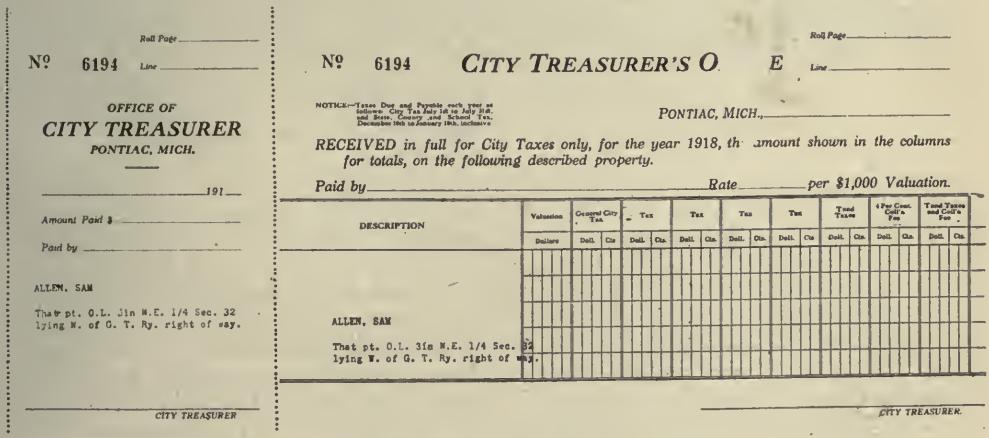
Pontiac, Mich.—The city of Pontiac has recently established a time-saving method in connection with the issuance of tax rolls and tax receipts. We have about 15,000 descriptions in the city, including "metes and bounds" descriptions and recorded plats and additions. We have installed an addressograph and a graphotype, the latter being a machine for making the plates for use on the former. This work can be done by a girl. An intelligent operator should be able to make and assemble 300 plates per day. In making out tax rolls or tax receipts, an experienced girl can run them off at the rate of 10,000 per day. The saving in time, while a very considerable item, is not the most important factor. Descriptions on the assessment rolls, on the tax roll and on the tax receipt under this method are identical, and this in turn eliminates the possibility of errors in descriptions, which so often occur under the old long-hand method of writing tax records. We are more than satisfied with the new equipment.

F. G. ELY,
Mayor.

PARK DEPARTMENTS

A Combination Market and Playground

St. Paul, Minn.—This city has a rather unique institution in a combination market and recreation center established in the old First Swedish M. E. Church, which was leased by the city for the purpose. The plant is well fulfilling its purpose. During a single month about 10,000 persons



Roll Page

Nº 6194 Line

OFFICE OF
CITY TREASURER
PONTIAC, MICH.

191

Amount Paid $

Paid by

ALLEN, SAM

That pt. O.L. 31n N.E. 1/4 Sec. 32
lying W. of G. T. Ry. right of way.

CITY TREASURER

Nº 6194 CITY TREASURER'S O E

Roll Page

Line

NOTICE—Taxes Due and Payable each year as follows: City Tax July 1st to July 31st, and State, County and School Tax, December 10th to January 10th, inclusive

PONTIAC, MICH.,

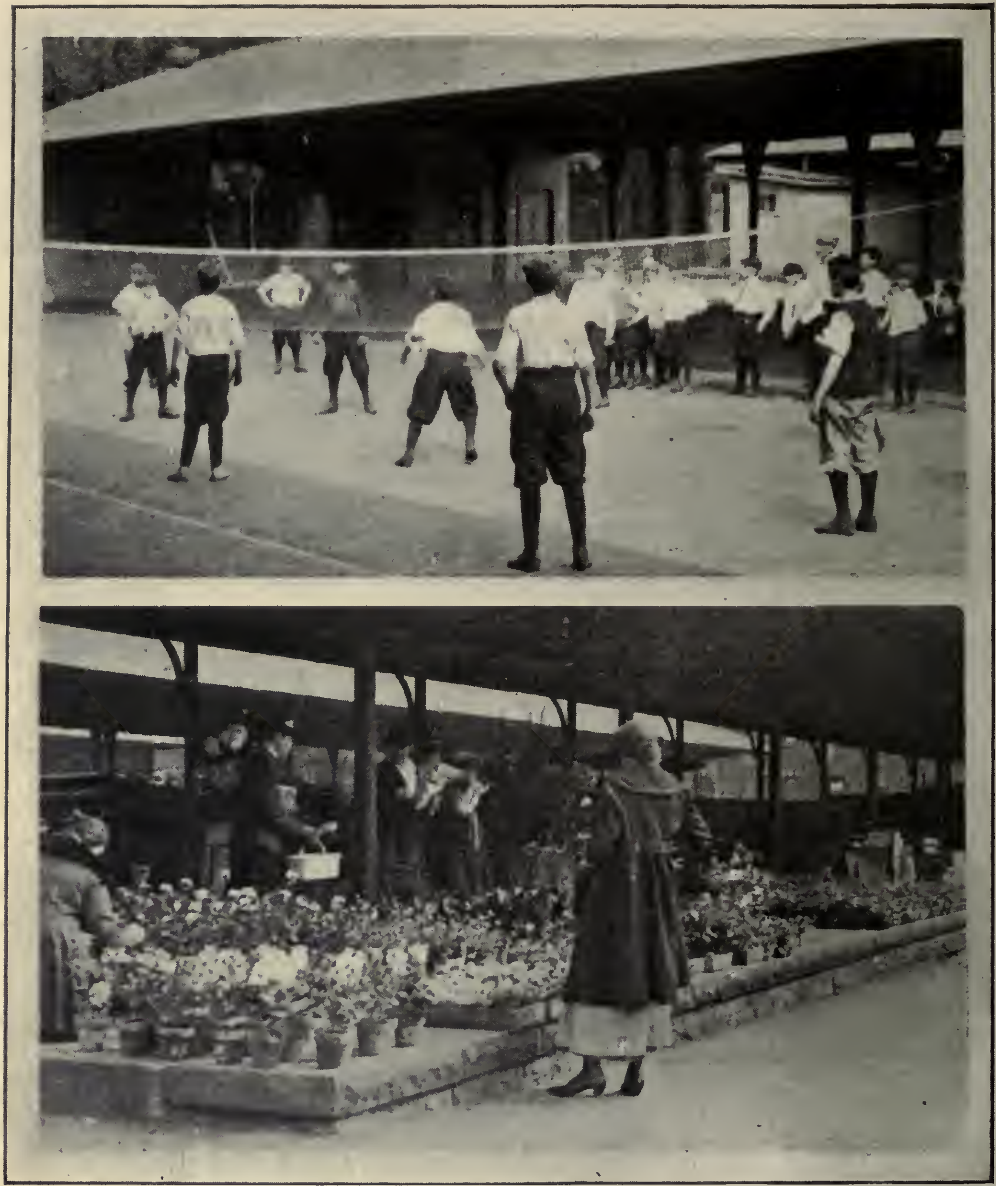
RECEIVED in full for City Taxes only, for the year 1918, th amount shown in the columns for totals, on the following described property.

Paid by Rate per $1,000 Valuation.

DESCRIPTION	Valuation	General City Tax		Tax		Tax		Tax		Tax		Total Taxes		4 Per Cent. Coll's Fee		Total Taxes and Coll's Fee	
	Dollars	Doll.	Cts.	Doll.	Cts.	Doll.	Cts.	Doll.	Cts.	Doll.	Cts.	Doll.	Cts.	Doll.	Cts.	Doll.	Cts.
ALLEN, SAM That pt. O.L. 31n N.E. 1/4 Sec. 32 lying W. of G. T. Ry. right of way.																	

CITY TREASURER.

TAX RECEIPT USED BY THE CITY OF PONTIAC, MICH.



COMBINATION MARKET AND PLAYGROUND IN ST. PAUL, MINN.

attended its various activities, taking part in all forms of club work for boys and girls, calisthenics, and games, such as basket-ball, push-ball, etc. There are special hours for glee clubs and orchestras, and arrangements have been made to give individual instruction in music. We have hearty coöperation from the public library, which places about 100 books in this recreation center every two weeks.

As soon as spring approached we began to use the open market space for outside games and various playground activities. Under the market shed, there are demountable swings and teeters. These are taken down every night so that they may be out of the way of the market operation the following morning. The apparatus is set up again at one o'clock in the afternoon. The market center is located in the most congested part of the city, where Italians, Poles and Jews predominate. One of the purposes of the undertaking is to assist in the assimilation of these people by Americanization methods and by teaching them lessons of cleanliness, honesty and good sportsmanship. The activities of the center are divided into literary work, reading circles, discussion groups, dramatics, dancing and singing lessons, community singing, sewing classes, children's games, paper cutting and other kindergarten teaching for little folks, with stereopticon lectures and moving picture shows. The photographs illustrate how the people are making use of the grounds, both as a market and as a recreation center.

ERNEST W. JOHNSON.
Commissioner of Parks and Playgrounds.

Taking Recreation to Outlying Sections

Los Angeles, Cal.—Several forces when acting in the same direction are likely to produce results. This has proved to be the fact in connection with the development of a neighborhood recreation center in an outlying district of the city of Los Angeles.

The people of the Glassell Park Community under the leadership of several representative women had attended far-distant municipal recreation centers and derived the usual benefits resulting from participation in what are known as "mothers' play clubs or classes." These women concluded the distance was too great to travel for that purpose, and upon conferring with representatives of the City Playground Department, the Public Library, and the Community Church, a scheme was evolved whereby the church property could be used, the library department would provide books, and the Playground Department would provide leadership for physical activity. This opened the way for the beginning and conduct of what is now known as "Glassell Park Community Center Association," a representative organization consisting of a council of twelve members, whose chief object is to work for the civic betterment of the community.

Three gymnastic or play clubs have been organized under the leadership of the City Playground Department—two for women and one for men. Other activities involving library, Red Cross and Boy Scouts are progressing nicely. At a later date the activities will be transferred to the neighborhood school, where a larger and more useful work will be accomplished.

This association in working for the best interests of the community has decided to be non-partisan and non-sectarian, and will exclude no one. The Playground Commission is ready to send trained leaders to other outlying districts to encourage the promotion of similar work, thus opening the way to bring the recreational benefits to the very door of scattered and distant communities.

C. B. RAITT,
Superintendent, Los Angeles Playground Department.

PUBLIC WELFARE - AND SERVICE -

Short Weight Prevented by New Ordinance

Johnstown, Pa.—On October 29, 1918, the Council of the city of Johnstown passed what is known as the Triplicate Weighbill Ordinance to protect consumers from short weight. This enables people to determine by an authorized statement just how much coal has been delivered to them and how much they are paying for it.

From early in 1918 the inspector of Weights and Measures was showered with complaints from consumers who were receiving short weight in coal delivery. A thoro investigation of these complaints showed that they were well founded, and the matter was immediately taken up with the City Solicitor. As a result, the following ordinance was drawn up and passed by the Council, becoming effective November 8, 1918:

An Ordinance

Providing for the Weighing of All Coal Sold and Delivered in the City of Johnstown, and Imposing a Penalty for the Violation Thereof.

Section 1. Be it enacted and ordained by the Council of the city of Johnstown, Pa., and it is hereby enacted and ordained by the authority of the same that:

All coal sold and delivered in the city of Johnstown shall be weighed and sold by net weight. The person weighing the coal shall issue a triplicate weighbill; one weighbill to be kept at scales where coal is weighed, and two weighbills to be handed to the person delivering the coal, who shall leave one of said weighbills at the place where the coal is delivered. The weighbills shall have plainly written or printed thereon the net weight of the coal, the name of the person, persons, company or corporation selling the coal, and the name and address of the person or persons to whom the coal is to be delivered.

SECTION 2. Any person or persons violating any of the provisions of this ordinance, upon conviction thereof before the Mayor or any alderman of said city, shall be sentenced to pay a fine of not less than five dollars ($5.00) or more than fifty ($50.00) and costs, and in default of payment of fine and costs, shall be sentenced to imprisonment in the city or county jail for a period of time not exceeding thirty (30) days.

By providing a triplicate weighbill, one copy of which is kept at the scales, one by the parties responsible for the delivery of the coal, and the third in the possession of the consumer, a complete record is made whereby all parties are protected against any fraudulent weighing or complaint.

Since the passage of this ordinance there has been practically no complaint of short weight, and such troubles seem to have been eliminated.

J. W. CROTZER,
Inspector of Weights and Measures.

POLICE DEPARTMENTS

School Lectures on Public Safety by Cleveland Policemen

CLEVELAND, OHIO.—In the regular course of police work in Cleveland the officers find that they are called upon to care for children at busy street crossings, at playgrounds and at every place in the city to which the small boy in his wanderings may go. This has made it necessary to develop an understanding between the officers and the children, so we decided to send the police to the schools; and in order to equip them, we organized a training school.

Officers and patrolmen of good personality, appearance and ability to speak in public are selected for this work in each precinct, and one of them is assigned to one or two school buildings, depending on the size of the buildings. The men who have been selected then meet at the police training school with the man in charge and members of the School Board. The subject to be taken up is discussed carefully, and each man is furnished with a copy of instructions which serves as a basis for his lectures at the school, altho he is also free to mention some of his personal experiences.

Arrangements are then made thru the School Board with principals of the various school buildings for the officers who are assigned to their buildings to call at a certain time and talk about a number of the rules. The talks last about ten minutes, until all the rules are gone over. Then the teachers are furnished with a copy of the instructions and they call the children's attention to them from time to time. As a result of our experience we suggest that a prize of a banner be offered to the building having the fewest number of accidents during the year, and also a medal to every child that prevents an accident.

A campaign of this kind is bound to bring good results in preventing accidents, not only to school children but to their parents as well, for the children naturally speak to their parents about these instructions. Such a campaign also has a tendency to bring the children closer to the men representing law and order, and this creates a feeling of trust and respect for our laws and the police officers, eliminating the feeling of fear of the laws and distrust of the men representing them which seems to exist in the minds of the foreign-born.

Some of the topics on which the officers talk to the children are included in the following extracts from the instructions furnished to the schools:

INSTRUCTIONS FOR SCHOOL CHILDREN

Traffic Warnings

Before crossing a street, stop and look both ways, first to the left (as danger will likely be nearer from that side) and then to the right. If the street is clear for at least half a block, then go ahead and cross the street quickly.

In crossing a street be sure to do so on the crosswalks and at no other point, for the reason that there is less danger there than at any other place. The law compels drivers of vehicles to drive across crosswalks slower and use more caution there than elsewhere.

When crossing a railroad, look both ways, and cross when you are signaled by the watchman to do so. He is paid to be on the lookout and prevent accidents. Never cross a railroad track when the gates are down. Stop, look and listen.

Never play in the streets that are used frequently by automobiles or other vehicles, because you are apt to bewilder the drivers, thus making them lose control of their vehicles, which would be dangerous not only to you but to others as well.

If you are standing in the street and see automobiles or other vehicles coming both ways, stand perfectly still and let the vehicles pass around you, because they are not likely to run over you if you do not move.

Never steal a ride on an automobile, street car or any other vehicle, because you are in danger of falling off and being injured or of being run over by another vehicle when you jump off. Stealing a ride is a very dangerous practice at all times and should never be indulged in.

Never throw a stone or any other missile at any vehicle, or, in fact, at anything, because you might injure someone, damage the vehicle or some other property, or cause the driver of the vehicle to lose control of it, which might result in a serious accident. For that reason the throwing of stones is against the law.

Never touch an automobile that is standing in the street unattended, or move any lever or blow the horn or even go near it, because you might release the brake, start the engine or do something else that would do some damage or cause a serious accident.

If you are playing in the street and see a vehicle approaching, get onto the sidewalk as quickly as you can and remain there until the vehicle has passed.

Never stand on the sidewalk close to the street when vehicles are passing close to the curb. That is always dangerous. Get as far away as possible from any passing vehicle.

Never play ball, use roller skates, coasters or other similar contrivances on the streets, particularly on streets frequented by automobiles or other vehicles, because it is very dangerous, not only to yourself but to the driver of the vehicle as well.

Never chase a ball, hoop or anything into the street without first looking and making sure that you are not in danger of being struck by some vehicle.

Do not attempt to get on or off a street car while it is in motion, and when alighting from it be sure to look around so that you do not jump in front of an automobile or some other vehicle and get injured. Do not stand in the street, but get to the nearest curb as soon as possible. Never walk around the rear of a street car without first making sure that another vehicle is not approaching from the other direction.

Do not play around railroad yards or on street car tracks. The city maintains playgrounds and other places of recreation. You will find competent instructors in charge, who will make you welcome and your visit a pleasant one.

Fire Prevention

Help to keep your house, yard and outbuildings clear of rubbish and inflammable material.

Do not start a bonfire near a fence, barn or house; never when the wind is blowing.

Never fill a lighted lamp.

Never use gasoline or other liquid which, when evaporating, causes a gas to form, to clean gloves, etc., in the house. Gasoline vapor is more deadly than dynamite.

Do not look for lost articles or a leak in the gas pipes with an open flame. And when the gas in the furnace blows out, open all the windows and doors before lighting.

Oily rags should never be kept around any building. They might cause a fire from spontaneous combustion.

Never start a fire with kerosene or gasoline.

Never hang clothes close to a grate or stove.

Do not heap up the grate and then go away and leave the fire.

Matches should never be left in clothes hanging in closets.

Never play or allow any one younger than yourself to play with matches, bonfires, or fires of any kind. One hundred and forty-eight children under five years of age were burned to death in Ohio in one year from this cause.

Use nothing but safety matches; they should be kept in a metal box and out of reach of young children. There were 209 fires in Ohio last year due to children and matches. Burned matches should be deposited in a metal box and not thrown on the floor.

If you smell gas in the house, do not strike a match, but open the doors and windows. If you smell smoke, investigate until you find the cause.

Water frozen in water pipes should never be thawed out with an open flame. Many fires have been caused by this practice.

GEORGE J. MATOWITZ,
Police Captain.

Light Cars Prove Economical in Police Work

Louisville, Ky.—This Department has placed in service six Ford machines, which have taken the place of thirty-three horses and forty-four men; twenty-four of these men were mounted, and the other twenty were footmen. To operate the machines day and night, we use two men on each shift, making a total of twenty-four men. Twenty-four of the horses were used regularly on the beat, and it required nine extra horses to keep the beat filled. We also found that it required two extra Ford machines to keep the six machines running on their beats. A comparative statement of the work of the machines and the horses is as follows:

33 horses at $1.00 per day for 30 days....	$ 990.00
44 men at $3.50 per day for 30 days.......	4,620.00
	$5,610.00
6 machines averaging 210 gallons of gasoline per month..........................	$ 315.00
24 men at $3.50 per day for 30 days......	2,520.00
	$2,835.00

These figures show a saving of $2,775. From this saving must be deducted the cost of repairs, tires, etc. The cost of repairs, of course, will vary according to the men who operate the cars. When we first placed the cars in service, the chauffeurs we secured were not the best in the world, and consequently our repair bills were exceptionally large. However, as the men grew more proficient in the use of the cars, and by eternal vigilance on our part, we have gradually lowered the cost of repairs. We fully believe that the beats are patrolled as well, if not better, by the use of the machines than by the combined efforts of the footmen and the mounted men. The results of the change from horse and foot service to machine work have been gratifying from several points of view.

We have also installed a new semaphore as an experiment. Instead of having a pedestal resting on the ground, as did the old semaphore, this one is suspended from the overhead trolley wire. It is in the shape of a square, with "Go" on two sides and "Stop" on two sides, and it is operated by the traffic officer by means of a pole. One of the particular points of advantage of this semaphore is that it is above the tops of the street cars and we do not have the bother of sending a wagon to bring it in each evening. All that the traffic officer has to do is to take the pole, which is like a light fishing pole, into some corner store and leave it.

LUDLOW F. PETTY,
Chief of Police.

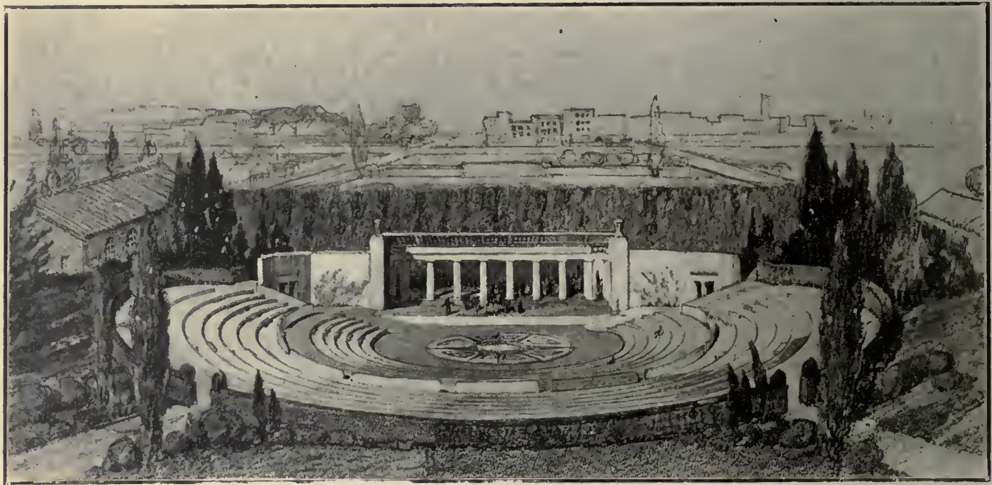
EDUCATION - DEPARTMENTS

A Unique Memorial to Heroes

SANTA MONICA, CAL.—The monuments, obelisks and arches which have been erected in honor of American soldiers and sailors are expensive and imposing, but they serve no useful purpose. The Board of Education of the city of Santa Monica saw no reason why such memorials should not be both beautiful and useful. Accordingly, the Board asked the people to vote a bond issue of $30,000 to build a memorial open-air theater on the High School grounds, to be dedicated to the soldiers, sailors and marines who were enlisted in the Great War. At the election held May 20, the bonds were voted.

The High School grounds consist of fourteen acres, sloping gently toward the ocean from a hill which is crowned with a magnificent group of buildings. The memorial will be in the form of a Greek theater on the lower part of the hill, where it rises from the edge of a walk connecting the boys' and girls' gymnasiums. On one side of the walk will be the tennis courts, already in place; on the other side, the proscenium.

The new theater will have a seating capacity of 3,000, thus supplying a long-felt need for a public assembling place where large audiences can be brought together. It will rest in what is now the open part of the grounds at the foot of the hill, between tall and stately trees on the north and south sides of the grounds, and will be further banked up by trees and shrubs so that it will be protected on all sides from the wind.



PROPOSED MEMORIAL OPEN-AIR THEATER, SANTA MONICA HIGH SCHOOL, CAL.

It is expected that the structure will be completed by the middle of next November, and the Board of Education is already planning to dedicate it at Thanksgiving by a great historical pageant.

The accompanying drawing shows the theater as it will appear to a person looking down the hill from the Central High School building.

HORACE M. REBOK,
City Superintendent of Schools.

Many things must be carefully prepared, as carefully watched, and persistently pushed, by the man who will get any city public into and thru a great public improvement. Wearied, and worried, and hindered, he must never sleep, never be beaten, never desist. HORACE BUSHNELL.

Steel Paving Guards

The Results of Two Years' Experience in Philadelphia, Pa.

By Charles F. Puff, Jr.
Assistant Chief Engineer, Bureau of Highways, Philadelphia

FROM the day, not known to history, when man decided that an ordinary earth road was not sufficient to meet the traffic needs of his community, the problem of protecting the edges of the wearing surface has confronted the highway engineer.

Without entering into an extended academic discussion of this subject, we might tritely state that protection of the road edge is needed for the following reasons:

(1) Fraying due to lack of stability of the shoulder material, this in turn allowing the road to lose its correct cross-section
(2) Fraying due to frost
(3) Fraying due to inadequate drainage
(4) Fraying due to heavy and fast-moving traffic breaking the edges

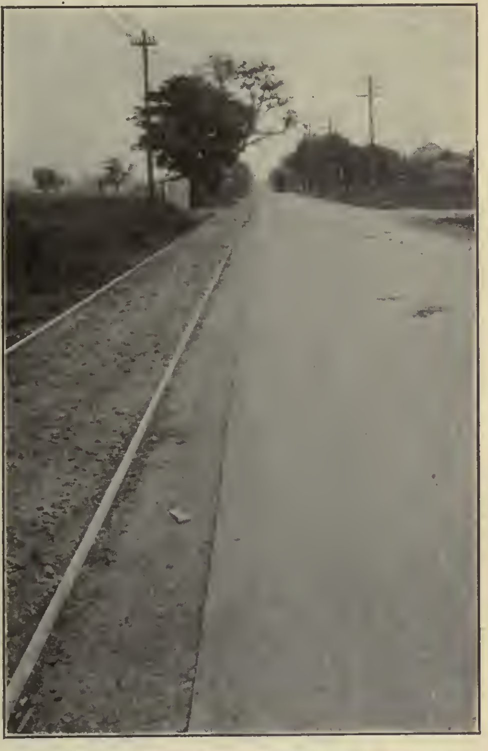
This wearing surface in most cases has been held in place by earth or cinder shoulders compacted by a steam roller. Formerly traffic was both light and slow, and therefore the problem did not receive attention proportionate to its importance. Later on, rubble stones were placed along the sides of the improved portion of the roadway, and in a few cases this method combined the protection idea with that of drainage.

Subsequently, dressed granite blocks were used as runners or headers, but on account of the ever-increasing amount and speed of traffic this protection soon proved inadequate. The failure of this type was generally due to frost and cobbling.

With the advent of bituminous wearing surfaces, planks were used to some extent, but the cost of restoring planks exceeded the cost of the pavements.

Next we find concrete headers being constructed as an integral part of a concrete base. Then follows the concrete header made with a richer mix, and, still further, one with a steel-armored edge.

The two last-named types of road edge protection have done fairly well, but such extreme care and supervision are necessary for any success that engineers have ever been searching the horizon for something which would guarantee first-class results with a minimum amount of supervision. With this in view, the Bureau of Highways, Philadelphia, decided to test out the International steel road guard, invented and designed by M. William Godwin. The place selected for making the test was on Island Road at Lyons Avenue, in southwest Philadelphia. Island Road is the main artery of this district, which includes the United States Emergency Fleet's Hog Island Shipyard, the Remington Gun Works, the Baldwin Locomotive Works, Fort Mifflin, and the various other governmental and semi-governmental industries situated along the Delaware River between Philadelphia and Chester.



PAVING GUARD ALONG EDGE OF ISLAND ROAD IN SOUTHWEST PHILADELPHIA, PA.

Character of Paving

The paved portion of the roadway is 19 feet, and consists of 5 inches of concrete base on an old macadam base, 1 inch of asphalt binder and 1½ inches of asphalt wearing surface, with penetration macadam shoulders 2 feet wide, flanked by an electric street railway track on each side. The traffic consisted of loads upward of 20 tons per vehicle with relatively high speed. The amount of this traffic was enormous, and, while no census was taken at this point, a conservative estimate of traffic here during the war would be 700 tons per foot-width of road per day of 16 hours.

Lyons Avenue is one of the principal distributing country road arteries leading from Island Road, and therefore the paving guard received considerable traffic turning off at this point. The length of steel guard used was about 300 feet. In the other sections where steel guard was not used, concrete headers were constructed.

Experiments with the Steel Guard

The guard consisted of a 2 x 2 x ¼-inch steel angle with 1-inch anchors taken off each 18 inches. These angles were clamped to the outside form of the concrete base and set from ⅛- to ¼-inch below the grade of the finished wearing surface, the anchors being bedded diagonally in the concrete.

The work was done during the year 1917, and to date, after nearly two years of service, it is in perfect condition, while the concrete header, tho covered with a surface coating of tar and gravel, gives signs of disintegrating under the traffic. The results of this experiment were so gratifying that at present we are considering plans to make further use of these guards, the scheme being to utilize the old macadam base of a main country road artery by placing concrete headers capped with the steel guard at the edges of the road, with a bituminous concrete wearing surface. By this type of construction it is believed the cost of an entire concrete base can be saved.

The cost of the steel guard construction is slightly in excess of the straight concrete header, but about the same as that of armored concrete.

Steel Guard Adjacent to Car Rail

Another section of about 100 feet was used on Woodland Avenue at 40th Street to take the place of granite block runners. The shoulder was paved with a 6-inch concrete base, 1-inch binder course and 1½-inch asphalt wearing surface. Here the size of the angle was 2 x 2 x ¼-inches with anchors at 18-inch centers, each anchor being tied to the other by a ⅜-inch steel rod. About 30 per cent of this guard was effective, while in 70 per cent the asphalt cracked at the edge. The failure of this test was due to the high carbon steel and the spacing of the anchors.

The anchors in the present design are 10-inch centers, while the steel where used against car rails is made of a lower carbon content. We are about to place 150 feet of the new design at Broad Street, Ridge Avenue. Here it will receive a diagonal crossing which is a severe test.

Summary

Summarizing our experience, it will be seen that the guard used as an edge protection is a direct success, while when used adjacent to rails the results are yet to be proved. There is no doubt that the guard will find an extended use as soon as highway engineers become acquainted with its merits.

In St. Paul, Minn., 91.8 Per Cent of the Water Services Are Metered.
How Does Your City Compare with This?

Chlorine Absorption and the Chlorination of Water

A Study of the Rate of Disinfection of Varying Waters

THE disinfection of waters by means of various forms of chlorine has been practiced in this country and abroad for many years. During this period a general theory of chlorination has grown up, particularly on this side of the water, which has had very little scientific basis. The general hypothesis concerning the effects of chlorination, the proper dosage, and the nature of the chemical and biological reactions have been deduced from a few well-controlled experiments on waters of certain characteristics.

The results of these experiments, however, have led to the universal adoption of chlorination for waters differing materially from those upon which earlier experimental data were made available. When, therefore, a number of water supplies were treated with standardized doses of chlorine, or its compounds, failures in performance were many times recorded. Abel Wolman and Linn H. Enslow were detailed by R. B. Morse, Chief Engineer, Maryland State Department of Health, to make a thoro study of this problem, and the results of their investigation were reported somewhat at length in the *Journal of Industrial and Engineering Chemistry,* from which the following abstract is prepared.

In the supervision and control of a single water supply, the problem of chlorination offers far less difficulty than in the case of a group of water supplies all of which have distinctive and disconcertingly variable qualities. The control of disinfection of a city water supply, supported by daily chemical and bacteriological examinations, may at least approach a scientific procedure, altho surprisingly few cities, even now, actually do more than give a superficial dosing at a more or less constant rate. The supervision of chlorination becomes, however, a problem of major importance when a large series of supplies is to be treated under the direction of some central authority, like a state department of health, or when a municipal supply is taken from a number of sources. With a large number of water supplies, inadequately sampled, some in the raw state, some just after coagulation, some filtered, ranging thru every degree of color and turbidity, now free from organic material and an hour later loaded with surface wash, what form of control should be adopted? Here a speedy, safe, easy method of antecedent control, rather than of subsequent failure, is essential. On this phase of chlorination—the preliminary routine control of widely different types of waters—scientific literature, with very few exceptions, is silent.

When we bear in mind that a number of supplies are under the supervision of laymen, it becomes clear that consistently good results in disinfection are hardly attainable without the use of some presumptive indicator of an efficient chlorine dose. Presumptive tests of chlorine efficiency have been discussed by various students of the problem, but their results can hardly be considered definite.

The present brief discussion is the result of a study, carried on for eighteen months, of the application of chlorination under variable conditions.

Absorption of Available Chlorine

The importance of the absorption of so-called "active chlorine" by different waters is somewhat ill-defined in its relation to disinfection or the elimination of objectionable bacterial life. Some experimenters assert that the amount of absorption discloses little concerning the destruction of bacteria, while others assume that the chlorine consumed in "oxidizing organic matter and various salts will not effect sterilization." Since the latter assumption necessarily permits an increased factor of safety in the control of chlorination, it is probably advantageous to use the hypothesis as a base until the collection of adequate data indicates what quantitative variations therefrom may be necessary.

The investigators carried on considerable experimental work to obtain data on the rate of absorption of chlorine by different waters. Their results indicate that the rate of chlorine absorption deviates from the recognized law of chemical reaction in an increasing degree with waters of increasing organic contents.

The use of color readings as a presumptive indicator of the amount of chlorine which would be absorbed by a water in a given period has been suggested as a convenient procedure for routine operation of disinfectant plants. To be of any value, such readings should be the result of a long series of correlated experimental observations. Such continuous series have not been developed, it is believed, for many individual water supplies, while still less has been done in the way of comparative readings on different water supplies. While the reported data on this question are not sufficient to warrant any very definite statement, it is believed that the evidence shows that, for the same water supply, changes in color are not necessarily adapted to the prediction of chlorine absorption readings because of the absence of any adequate conversion factor.

Turbidity and the Rate of Chlorine Absorption

An extended study of 350 samples from the Potomac River at Luke, Md., indicates there is practically no correlation between these two phenomena, altho the turbidities ranged from 0 to 90 parts per million. The particular case of the Potomac River is interesting as showing the need for guarding against unwarranted correlations between the physical property of a water and its biochemical action. Sudden rainfalls create dilutions of mine wastes, but at the same time raise the turbidity readings in the water; therefore with the increased muddiness of the water comes a reduction in the strength of the mine wastes which is not very easily predicted.

Oxygen Consumed and the Rate of Chlorine Absorption

An extensive study of this factor has shown a very close variation of chlorine absorption with oxygen-consumed values of different water supplies. This correlation, it should be emphasized, is independent of the source or nature of the water, since the forty-five waters which were tabulated in this study included those from raw surface streams, deep wells, and filtered supplies.

An empirical curve, based on the data secured, indicates at once that the amount of chlorine absorbed in a definite time interval does not increase in direct proportion with the increase in pollution of the water as measured by the oxygen-consumed test, but that the 5-minute rate of chlorine absorption shows a decreasing acceleration with increases in pollution. In other words, increases in oxygen-consumed values appear to result in relative decreases in the intervals between successive chlorine absorption values.

The apparent correlation discussed above has considerable practical importance aside from its use in the chlorination of water supplies. Its probable existence may result in the development of an extremely rapid presumptive indicator of the quality of a water, namely, its chlorine absorption in a definite time interval. It has been found comparatively simple to differentiate between an underground supply of good quality and a comparatively poor surface supply by means of a chlorine absorption test made in five minutes. The information gained would seem to be capable of wider application to the entire field of water treatment.

Chlorine Absorption and Effective Disinfection Dosage

The practical effectiveness of any chlorine treatment is necessarily measured and conditioned by its ability to eliminate the significant bacterial life in the water. The ready preliminary determination of the amount of chlorine necessary for subsequent use to be effective in removal of bacteria has been the chief object of investigations in this field. In practically all of these methods of presumptive testing for effective dosage, chlorine absorption tests have played an important role.

American practice in the chlorination of water supplies has always been sharply differentiated from the foreign. In general, foreign sanitarians have employed chlorine doses appreciably higher than those in use in America. This policy has been the result of a conservative conception of the whole question of chlorination, and has therefore left its impress upon the modern systems of chlorination control.

The principle underlying practically all of the chlorination control procedures is that of measuring the amount of available chlorine absorbed by the water to be disinfected in a given period of time. To this amount a factor of safety is usually added, giving a resultant so-called effective chlorine index. It is apparent that the important element in the above procedure is the time element. The time interval taken for the measurement of the chlorine absorption is dependent upon the consideration of the death-rate of the bacteria under the existing conditions. A dose measured on the above principle is a safe dose only if the time interval used is amply sufficient to provide for adequate bacteria destruction. The question naturally arises, "What is a safe time interval for the chlorine absorption test?"

The literature on chlorination suggests various answers to this question. Adams, in his discussion of the chlorination of the water of Toronto, Canada, assumes that three minutes (plus a factor of safety) is a sufficient time interval for such a test, but such a time interval as this is not universally applicable, as evidenced by a survey of the data reported by Race. It would appear from the number of his experiments that effective sterilization, or even approximately fair destruction, is frequently not obtained even after a 60-minute interval. The application of a 3-minute absorption test to such a condition would demand, of course, an auxiliary factor of safety of high proportions in order to eliminate the danger of ineffective dosage.

Professor Santoliquido, of Italy, adds to the general theory by stating that "the bactericidal action of chlorine is not instantaneous for any particular bacterium; in order that action should result, there is always necessary a contact period, which, at a minimum, must be from 10 to 20 minutes."

Costa and Pecker modify the system of presumptive test by eliminating the factor of safety and using their so-called "chlorine index." The index appears to differ but slightly, in its evaluation, from the usual chlorine absorption tests reported by other authors and in this discussion.

The foregoing discussion seems to indicate the absence of any general agreement either as to the necessary time interval for the chlorine absorption test or the relative scale of factor of safety. The evidence as to the velocity of bacterial destruction under widely varying conditions is far from complete. If the rates of disinfection shown by the experiments of the author are even approximately correct, it would seem that a 30-minute absorption plus a high factor of safety is hardly necessary. It is doubtful, too, whether such factors of safety as ½ to 1 could be universally employed under such conditions as exist in Maryland, where frequently the period of contact before consumption is so brief as to preclude a dose which would result in such excessive amounts of free chlorine at the tap.

Five- or Thirty-Minute Absorption Test?

For practical purposes, any rapid method of presumptive indication of efficient dosage is particularly valuable. It remains to be determined, however, whether the substitution of a rapid 5- for a safer 30-minute test will result in any practical diminution of a necessary safety factor. The demonstration of such an effect either in the positive or the negative direction would demand manifestly far more experimental proof than is at hand at present.

A series of experiments were run to determine the effect of increased time intervals upon the total amounts of available chlorine absorbed by different waters. In other words, what additional information is gained by extending the absorption test from 5 to 30 or 60 minutes? The answer seems to be that the importance of increasing the period of tests decreases materially with the increased values of the initial 5-minute absorption. Increased safety in dosage is occasioned by the 30-minute test, in those waters where the factor of safety is the least essential. Little additional safety is gained in waters of higher initial absorption.

If the 5-minute chlorine absorption is at all indicative of the pollution content of a water, then the evaluation of a 30-minute test seems to add but little necessary information as to effective dosage. It would hardly be advantageous to use a 30-minute test in preference to a 5-, when the former increases greatly the dosages for good waters and affects but little those of poorer waters. The addition of a constant factor of safety, as for instance 0.2 to the 5-minute absorption value, would apparently accomplish the same result in the routine control of chlorination as the use of a longer absorption time interval.

Why American Cities Must Fight Insects

By Dwight Pierce, Ph. D.

U. S. Bureau of Entomology

IN olden days, when each man thought his life and safety depended upon himself alone, there were no great social efforts, and when plague or black death visited a community, people died like rats, for there was no organized effort to fight the devastating disease.

Little by little it has sunk into the human consciousness that your health and my health depend upon the health of every other living creature in our community. Self-interest lies back of all our great social uplift, for unless we make the lives of those about us safer and happier and healthier we ourselves shall likewise suffer.

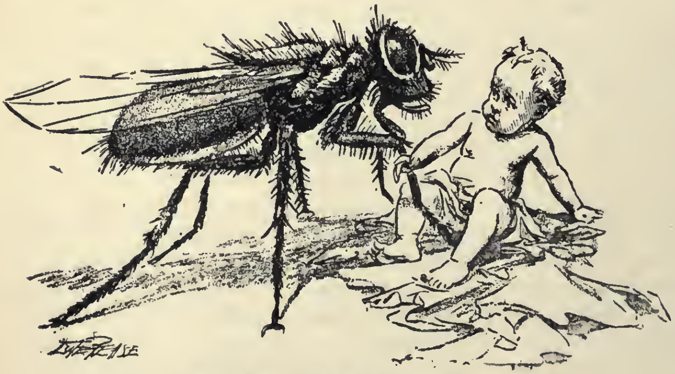
We have now come to the days when the world fights plague and yellow fever and many other scourges; when if one nation is stricken, another hastens to its rescue. Why? Because if we allow a disease to fester in part of the social body it will send its poison thru the whole system.

It must, then, be evident to all that if we actually know a focus of a dangerous disease, or the way such a disease is spread, or the means of preventing the spread of such diseases, it is incumbent upon organized society—whether it be nation, state, city or community—to act on this information and prevent the spread of these diseases.

We do know many of these things, but for some reason we do not act in unison. Why? Can it be that the facts are known or grasped by only a few, and that these few have not "put across" the information so that the general public can understand? Perhaps. Is it on account of indifference on the part of the public because the things complained of are so commonplace? Perhaps both reasons hold equally good.

Let me set down in black and white some of the facts over which we must get stirred up until we have united effort.

I am the Baby-Killer!
I come from garbage-cans uncovered,
From gutter pools and filth of streets,
From stables and backyards neglected,
Slovenly homes—all manner of unclean places.
I love to crawl on babies' bottles and baby lips;
I love to wipe my poison feet on open food
In stores and markets patronized by fools.



NO FAIRY-TALE HOBGOBLIN
As pictured by the "Newark News," N. J.

How the Fly Menaces Health

The common house-flies of several species which we so commonly see in our homes, on our dining-tables and food, and in the stores where we buy our foods, are probably the filthiest creatures about us and cause more disease than any other one thing.

Do you know that these flies breed in filth, and that they may have come direct from the stools of a typhoid patient, the sputum of a tuberculous person, the open infected sores of some animal, a dead carcass, or other loathsome, disease-contaminated substance? Do you realize that scarcely a fly that hovers about the milk in the dairy whence your supply comes but has been raised in filth and has come straight from such filth to the milk? And milk is a fine culture medium for disease germs.

When typhoid fever is traced to milk, it is usually found that in the vicinity of the dairy there is a sick person and that the stools of that sick person go into an open privy where the flies are bred that visit your milk.

When infantile diarrhea or dysentery or typhoid breaks out in a small town or in the country where there is no sanitary sewerage, flies spread these diseases to every household that is not protected against them, and often reach such homes by polluting their food at the markets.

Let us not mince words. Flies can successfully transmit any disease germs which they may pick up from sores, pus, sputum, excreta, manure, or carcasses, and they can deposit those germs on your eye, in your ears, in your nose, in sores on your body, and in your food.

Step by step scientists have now proved how they do it. The larvæ or maggots breeding in a privy, for instance, pass multitudes of germs thru their bodies. Many of these germs do not pass right thru, but lurk in the body of the maggot until it has developed into a fly and flown away from the privy. The fly may wander day by day for miles from its birthplace feeding on other filthy substances, and everywhere it alights it leaves a little drop of excrement and in that excrement for days can be found the germs it took up when a maggot. Finally it lights on some soft, moist food in which the germs can live, and some one eats the polluted food, ignoring or not seeing the tiny speck, and soon physicians are mystified to know how that person took sick of a disease with which there was no apparent contact.

(Photo by Dovener)

THE COMMON HOUSE OR TYPHOID FLY, THE MOST UNWELCOME VISITOR TO OUR HOMES

Will You Not Fight With All Your Might?

The entomologists will tell you how to do it effectively and economically.

The Mosquito Carries Disease

Then there is the mosquito. Who has not been bitten by one? In our land the mosquito is principally responsible for two common diseases—malaria and dengue or breakbone fever. You simply cannot take either of these diseases unless you are bitten by a mosquito which has already bitten a person sick from the disease. Then who is to blame if you get sick? Don't put all the blame on the community, for you are a part of it.

Organize your community to down the mosquito.

In southern and tropical climes, other diseases, some very mysterious and some quite hideous, are carried by mosquitoes and midges, so don't let them bite you if you can prevent it.

Cooties Also Carry Disease

Over in Europe our boys suffered from some terrible diseases—trench fever, typhus fever and relapsing fever. Bear this in mind: Every man who got those diseases was infested with body lice which brought the disease from some sick person. The lice bit him but did not inoculate the germs unless they pushed them into the lesion made by their bite, for the germs normally pass out of the louse's excreta and lie on the man's body. They must be scratched in or in some such way enter the blood. All that is necessary is to bathe frequently and keep the clothes clean. Of course we know the soldiers could not always do this.

Now here is my point: If one single man comes over here with infected lice and they get released in the poorer, more ignorant sections of our cities where lice are more or less common, we may see some of these dreaded diseases common in our own land.

Municipalities can keep down the louse incidence by rigid inspection, baths, and condemnation of infected clothing at jails, poorhouses, hospitals, asylums, lodging-houses and all public institutions. The children in the schools are often infested with head lice. There must be frequent inspections. The municipality must guard its inhabitants.

Look Out for the Flea

The flea alone can carry plague. Rats as well as men can be killed by this dread disease. If the plague exists in some out of the way part of the world and a ship docks there, a rat may come aboard and breed. This rat may have the plague, and its fleas spread the disease to other rats and soon to men. That ship docks at another port and the rats come ashore, and coming in contact with other wharf rats infect them. Soon plague appears among the people.

How clearly now we see that we must be our brother's keeper!

Diseases Are Carried by Bedbugs and Roaches

So, likewise, the bedbug in the hotel bites a transient guest who has some infectious blood disease, and a few days later it bites another guest and transmits that disease. It is most likely to do so if the guest scratches the bite or crushes the bug on his body over a scratched area.

The cockroach glides from privy to pantry, polluting wherever it goes. Beware of it, for it is a nasty creature capable of doing serious damage. Sanitary inspectors should watch the boarding-houses, restaurants and hotels, where cockroaches have their richest opportunity of spreading disease.

Is it not plain that we American people must wake up? Why tolerate so many of these preventable diseases? Let every American municipality take careful measures to hold down loathsome disease-carriers. There is no reason why we should permit hotels to remain bedbug-infested, nor public eating-places and stores to be swarming with roaches. Municipal action can govern such places. For the sake of public welfare, disease-carrying insects must not be tolerated in places which the general public patronize.

Housefly control in a city can be largely governed by adequate municipal inspection. Mosquito control is a question of inspection and drainage. Rat-flea control is difficult, but municipal regulations requiring rat-proofing will go a long way toward protecting cities from rat-flea-borne diseases.

No Health Department, State or Municipal, Can Effectively Prevent or Control Disease Without Knowledge of When, Where and Under What Conditions Cases Are Occurring.

See That the Vital Statistics of Your City Are Properly Maintained!

Refrigeration in Its Relation to the Municipal Power Plant

By J. V. Martenis
Assistant Professor of Mechanical Engineering, University of Minnesota

ONE important "side line" now forming a part of the business in many of our power plants is central station heating. The heating business produces a satisfactory income where it is properly managed, but this income is available only during the heating season. It is therefore quite natural that the management should look around for some means to secure an additional income so that the plant may be operated with greater efficiency and a larger profit on the capital invested. One way in which a municipal plant can serve a public need is in the manufacture of ice.

The idea of incorporating ice manufacture as a part of the business of a power plant is not a new one, for it has been tried out in many places with good results. There are more than 300 power plants now operating ice machines, requiring but little additional help and making a good profit in the business.

The relative merits of manufactured versus natural ice have been fully discussed at various times. In general, the manufactured product is to be preferred because of its clearness, purity and timely production. It is not necessary to produce more ice than can be marketed, and no storage is required unless the smaller consumption during the winter months shows the desirability of storing away a quantity to meet the trade conditions during the summer months. Ice when manufactured in connection with a municipal plant can compete successfully with the natural product, and will tend to curb the tendency of independent companies to unduly raise prices.

It will be evident to those who study the ice-making problem carefully that there are great possibilities in it when operated in connection with a municipal plant. It is also quite evident that all municipal plants could not be equally successful in the venture because of local conditions, but that fact should not deter others from a careful consideration of the problem. There is ample evidence that many plants have found the venture profitable, and in some cases it has been found necessary to put in additional facilities to meet the demand.

Type of Plant Needed

Refrigeration or a cooling effect can be produced in two principal ways: first, by compressing a gas, then cooling it and finally allowing the cooled compressed gas to expand and do work; second, to use a medium which can be liquefied under pressure, then allowing the liquid to vaporize and in so doing absorb heat. The first method is used in the "dense air" ice machines, in which it is impossible to attain temperatures lower than 50 degrees below zero, but it is not an economical form of refrigerating machine. The second method is used in practically all the commercial ice machines.

The liquid used in one type of machine is water, which vaporizes at a temperature corresponding to the pressure, so that when the pressure is reduced below atmospheric the vaporizing temperature is less than 212 degrees Fahrenheit, in proportion to the reduction in pressure. This type of machine is especially well adapted to temperatures of 30 to 40 degrees Fahrenheit and gives good economy at these temperatures.

The other substances principally used in refrigerating machines are ammonia, carbon dioxide and sulphur dioxide. Of these, ammonia is used in by far the largest number of commercial machines.

Without going further into the merits of different refrigerants, present practice shows that ammonia is used in 90 to 95 per cent of the commercial ice-making machines in the United States, and for general refrigerating and ice-making purposes it is the refrigerant that will be used in most commercial plants, altho there might be peculiar conditions that would prohibit its use.

There are two types of ammonia machines in use for ice making and other refrigerating purposes—the compression and the absorption machines.

The compression type of refrigerating machine resembles a steam engine and operates by taking in a charge of gas by suction and subjecting it to a pressure which must be sufficient to liquefy it when it is cooled by the circulating water. For instance, if the gas is cooled to 80 degrees Fahrenheit, a pressure of about 154 pounds per square inch will be required to liquefy it. So, if the pressure be reduced, the liquid ammonia will change back to a gas and in so doing will absorb about 503 British thermal units for each pound vaporized.

The absorption machine operates upon quite a different principle. In it the ammonia gas as it leaves the brine cooler is absorbed by a weak ammonia liquor, which is pumped thru the exchanger into the generator, where a steam coil heats it and drives off the ammonia gas, with some water vapor. The water vapor is largely eliminated as it passes thru the analyzer, and in the rectifier the remaining moisture is all taken out, leaving the dry ammonia gas to pass into the condenser, where it liquefies and is ready for expansion into the brine cooling coils. The steam pressure used in the generator coils varies from 3½ to 20 pounds per square inch.

The ammonia compression machine will require from 1 to 2½ horse-power per ton of refrigeration, depending upon the suction pressure. The ammonia machine will require from 26 to 38 pounds of steam per ton of refrigeration when the analyzer is used.

Ice Plant Systems

Two systems of manufacturing ice in common use are the "can" system and the "plate" system. Each system may use either distilled or raw water for making the ice. In the can system the standard cakes of ice weigh about 300 pounds, measuring 11 x 22 x 44 inches, while in the plate system the cakes of ice are 10 x 12 x 30 inches. A plant operating with raw water may be electrically driven to advantage, whereas the distilled water plant can use exhaust steam in the distiller.

The cost of the plate system is approximately one-third more than that of the can system. The can system may be arranged so that ice is being drawn thruout the day, using a hand tackle, while in the plate system the ice is drawn, sawed and stored in a few hours and requires a power hoist.

Owing to the increase in the cost of fuel, labor, etc., the cost of power for making ice can be given only for certain conditions of expense. In a steam-driven plant where coal costs $7.50 per ton, the power cost per ton of ice will be approximately 39 cents. Again, the cost per ton of ice will decrease as the amount of ice made increases. The cost per ton of ice will decrease as the amount of pipe surface installed in the brine tank increases.

If the compression system is used, two forms of power may be used to drive the compressor,—steam or electric,—and the preference for many of the municipal plants would be electric, because it is during the ice-making or summer season that the power load is likely to be the lightest and the addition of the refrigerating load would build up the load factor and enable the plant to operate with a greater efficiency.

To emphasize the financial side of the refrigerating business, let me quote some figures from plants now operating:

A 30-ton steam-driven compression plant made a profit of $4,900 on ice alone. A 20-ton steam-driven compression plant made a satisfactory profit. A 30-ton absorption plant using exhaust steam from pumps and auxiliaries made in one month a profit of $217. In a 7-ton steam-driven plant the profits averaged $500 a month. A 10-ton absorption plant earned a profit of $3,545 for the period of June to September.

The towns in which the above-quoted plants are located vary in population from 15,000 to 2,500.

An operator says:

> "My experience in the ice business shows that many poor-paying power plants can be put on a dividend-paying basis thru it, and the increase in operating cost is small. I believe a plant that is trying to put on a day circuit could have a nice business by adding an ice plant. We propose to increase the present 10-ton steam-driven plant to a 25-ton motor-driven plant and shut it off during the peak load. We use the can system and operate twelve months, but during the winter make only enough ice to supply the demand."

Acknowledgment.—From a paper read before the League of Minnesota Municipalities.

The Cleaning of Receiving Basins and Grit Chambers by Hydraulic Methods

By Charles E. Gregory

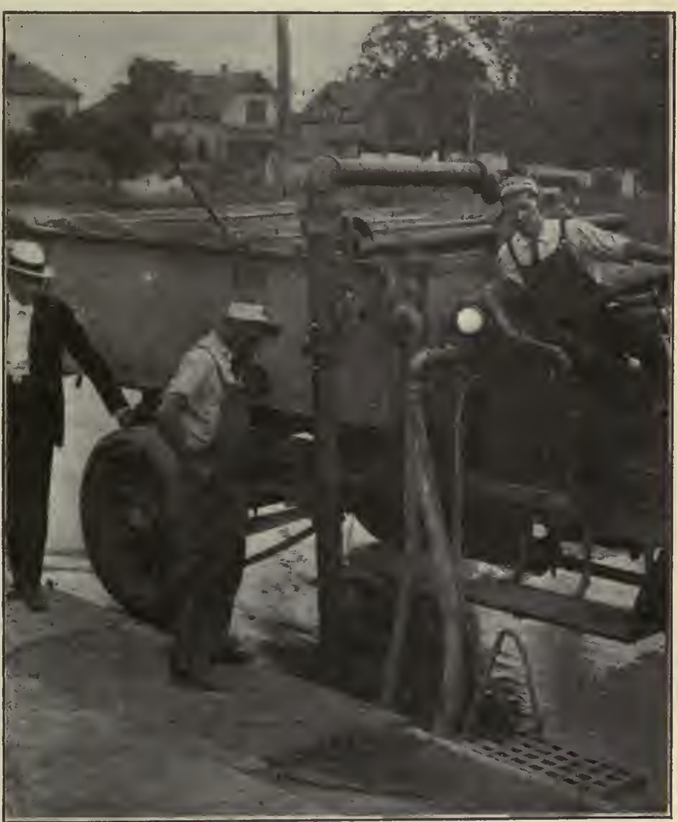
Former Engineer in Charge of Sewers, Boro of Manhattan, New York

ONE of the most disagreeable and expensive features of the administration of a sewer system in a great city is the removal of grit and detritus from receiving basins and grit chambers. Various devices have been used for this purpose from time to time, but for the most part this work has been done by hand labor.

The ordinary method of cleaning receiving basins in New York City is to send men down into the basin to dig out the material and place it in buckets, which are hauled or hoisted to the surface and dumped into water-tight carts. The material is then transported to the nearest available dump. In the boro of Manhattan these distances are often as great as three or four miles, and much time is consumed by the horse-drawn vehicles. The ordinary cleaning operation is a very unsightly and unsanitary nuisance, as passers-by are liable to be spattered, and sometimes the odors are quite offensive.

In 1916 a better method of cleaning receiving-basins was sought, and various devices were considered and tried out. The first machine which was constructed to do this work consisted of a 5-ton Packard truck with a 5-cubic-yard capacity metal dumping body, equipped with a crane and power hoist arranged to operate a small orange peel grab bucket. This bucket was small enough to pass thru the ordinary circular opening in the top of the basin, which is usually about 20 inches in diameter. The bucket closed by a cylinder and piston acting under oil pressure, the entire device being operated by power from the engine in the truck. This device worked successfully, but was disappointing as far as speed of operation was concerned. the grab bucket being so small that a great many operations of the bucket were necessary to clean a basin. The principal advantage of this machine over the ordinary hand labor and horse-drawn carts was at the transportation end, where considerable time was saved in going to and from the dump.

The advantage of motor equipment over



AUTO EDUCTOR IN USE IN THE BORO OF MANHATTAN horse-drawn vehicles was so apparent, however, that a better method of removing the detritus from the basins was sought, and an investigation of some hydraulic means of accomplishing this purpose was made, with the result that the so-called Otterson Eductor was found to have been operating successfully in some western cities. One of these machines, mounted on a motor truck, was purchased and placed in operation in the Boro of Manhattan in 1917.

The Machine and Its Operation

This equipment consists of three principal parts, namely, the truck and body, the pump, and the eductor and pipe. The body of the truck is constructed of No. 10 gauge steel plates on a framework of 3 x 3-inch angle iron. The tail gate is hinged at the top and is reinforced with a 3 x 3-inch angle frame. This gate is made watertight by screwing down on five swivel clamp bolts which press a rubber gasket attached to the inner face of the gate against the angle frame running around the rear of the body. A steel plate is bolted over the top of the front of the body to protect the driver from splash. A set of baffle plates are inserted in the body and are hung from an angle framework. The rear baffle is a steel plate screen with ¾-inch holes. Along one side of the body a channel is partitioned off by a steel plate to allow the water which has passed thru the body to return to the front end of the truck. A standard centrifugal pump operated by power from the motor of the truck is mounted on the right-hand side and is securely attached to the truck frame. A pressure gauge is provided on the right-hand side of the seat so that the driver can regulate the motor speed to give the proper pressure to the eductor. For ordinary working purposes the pressure is between 50 and 60 pounds. The eductor with its connecting piping is suspended from a bracket at the front of the body. This bracket is so designed that the arm which carries the eductor may be extended out to a considerable distance from the body of the truck. The discharge pipe from the eductor is 2 inches in diameter and discharges directly into the front end of the body. The eductor itself is at the bottom end of the pipe, which is telescoping, so that the eductor may be operated at various depths within the catch-basin.

The eductor operates on a steam syphoning principle, a jet of water at high velocity thru the throat of the eductor causing a suction at the open inlet to the eductor. The eductor and pipe is raised in and out of each catch-basin by a winch attached to the right-hand side of the truck. The eductor is not a device of high efficiency, but, being entirely free from any moving part, is particularly suitable for the removal of detritus from receiving-basins. It is estimated that the discharge pipe carries from 20 to 30 per cent of solids, which quickly settle down in the body on account of the baffle plates and strainers, the clear water returning to the pump and eductor in a continuous cycle until all of the solids have been removed from the receiving-basin.

Before purchasing the truck, a representative of this department went to Boston to witness a demonstration. A load was obtained from three receiving basins, which were cleaned in from five to seven and one-half minutes each. This demonstration indicated that under Manhattan conditions it would be possible to remove five or six loads per day, or about 22½ cubic yards, at an operating cost of about $12.00 per day, not including depreciation of plant, or $19.50, including depreciation and repairs. The cost of cleaning basins by the old method had been from $1.50 to $1.60 per cubic yard, and this test seemed to indicate that the same work could be done at less than $1.00 a yard with the eductor equipment.

During 1917 the machine was operated by a new gang of men who had to be broken into the methods of handling the apparatus, and quite naturally rather erratic results were obtained at first. It was soon found that the machine worked very much better where the material in the basins consisted of relatively clean sand and gravel. Under such conditions, as much as thirty cubic yards was removed in one day, even tho the distance to the dump was considerable. The average performance, however, was very much less on account of the fact that in a great many localities in the Boro of Manhattan the material in the receiving-basins contains a large quantity of tin cans, bottles, sticks, etc., which when sucked into the throat of the eductor obstruct the pipe until they can be thrown out by reversing the flow.

The time for cleaning a single basin has varied from five minutes to two hours. The average for the year, including idle time for repairs, etc., was about 11.4 cubic yards per day. The machine was used, however, almost entirely in the upper end of the island, where the haul is very long and where the cost with horse-drawn vehicles is excessive. This, in spite of the disappointing performance, leaves the cost somewhat less than under the older methods. The fact that the performance of the machine is so unusual under certain conditions encourages me to hope that under more experienced operation and management very much better results may be obtained.

Since the purchase of the above-mentioned machine a number of material improvements in detail have been made by the manufacturer, and I believe it is reasonable to expect that a much better result can be obtained from the improved machine. Various methods were tried for excluding sticks and cans from the inlet of the eductor, with varying success. Where the obstructing materials were not too numerous, it was possible to operate with satisfactory speed. The performance of this machine for 1918 was not as good as that for 1917, partly because some of the parts of the machine had become worn, and partly because of very unsatisfactory labor conditions due to the war.

A sewage screening plant has recently been erected at Dyckman Street and the Hudson River in the boro of Manhattan. This plant includes a grit chamber for intercepting sand and gravel and keeping it from the screens and the submerged pipe. Stationary eductors were installed in these chambers at the apex of hopper-shaped bottoms. The eductors are to be operated by water pressure from the city water mains, thus entirely eliminating all moving parts from the device for emptying the grit chambers. The ground adjacent to the plant is within the bulkhead line and is to be filled up in the near future, and the grit from the grit chamber is at the present time discharged into an open space which is below grade and is adjacent to the plant.

There has been a little trouble with these eductors on account of a considerable quantity of large rags, such as sheets or skirts. It has always been possible, however to locate and remove these rags with a hook on the end of a pole. Each grit chamber is provided with an agitator, which consists of a water pipe and nozzle for stirring up the sediment with the water so that it will flow easily into the inlet of the eductor. The lift at this place is not very great, and the operation as a whole has been very successful.

The following table gives the estimated heights to which material may be elevated for various water pressures with the Otterson Eductor:

PRESSURE REQUIRED TO OPERATE EDUCTORS

Height Elevated, Feet	Required Pressure, Pounds
15	55
20	70
25	82
30	95
35	104
40	112
45	122
50	130

The above table is figured on 30 per cent solids.

An Appreciation

To the Editor of The American City:

Will you allow me to express thru the columns of your valuable paper my appreciation of the courtesy, kindness and valuable assistance that I have received at the hands of the mayors, aldermen, councilmen and civic administrators and officials that it has been my privilege to meet during my stay in the United States and Canada while investigating on behalf of the City Council of Auckland, New Zealand, the municipal administration and works of American and Canadian cities. Wherever I have gone a warm welcome has been accorded me and facilities placed at my disposal to enable me to achieve my object, so that in the future America and Canada will be interesting not only for the notable works I have seen here, but also for the comradeship of those whom I have been brought in contact with.

Thanking you in anticipation, I am, dear sir, Yours faithfully,

W. E. BUSH, M. I. C. E.,
City Engineer, Auckland, New Zealand.

Chester's New Civic Center

By Louis J. F. Moore

WITH the beginning of the Great War, Chester, Pa., became an industrial center devoted to the manufacture of munitions.

A conflict arose between the new growth and the necessity of preserving the traditions of a Pennsylvania town. The waste lands along the Delaware were converted by pile-drivers and concrete mixers into great shops and shipyards. All the evils of a boom town appeared and Chester might have been forgiven if, grasping only at the immediate gain of this sudden growth, it had forgotten its plans and its love of tradition. It might have torn down old landmarks, old walls and buildings rich with color, and replaced the meticulous work of dead artisans with unashamed—and unornamental—plate glass and galvanized iron fronts.

But it did none of these. It provided the space for the new shipyards and munition plants and gave them every facility of commerce, but still went quietly about its city planning on the lines laid down, in part, some years before.

The Town Plan

To appreciate Chester's problem, one must have a rough idea of the city's layout. Along the Delaware the shipping takes up nearly the entire water-front. Railroad spurs, power plants and slums lie along the shore ends of wharves. Three blocks uptown, at Third Street, a cross-town street carries lines of shops to southern Chester, and trolleys running north to the munition works and Philadelphia. On Market Street, the principal business street between 5th and 6th, stands the old City Hall, and from it, as a center, the new development of Chester may be said to be laid.

Several years ago, the city decided to do what pitifully few of our American cities have done: it decided that its future growth should be along predetermined lines, intelligently planned, honestly carried out. It planned to link Crozier Park and Deshong Park with the old City Hall and Chester Park by a system of boulevards. Then after Deshong Park was completed, with its drives along Chester Creek, its public tennis courts, ball grounds, proposed swimming-pools, outdoor playgrounds and other features, the plans for the restoration of the City Hall and the development of a civic center were taken up and carried out. The original idea of this restoration had been decided on some years before, but in a tentative form. Gradually the plans took shape and, along with funds for the restoration of the old hall, it was planned to provide funds for a modern building for the executive offices of the city officials.

As the plans were made, the town planning movement that has been felt thruout the country gave a new impetus to the project and opened up a new phase of the problem. Why not a civic center, keeping the old hall in its ancient form?

The Development of the Civic Center

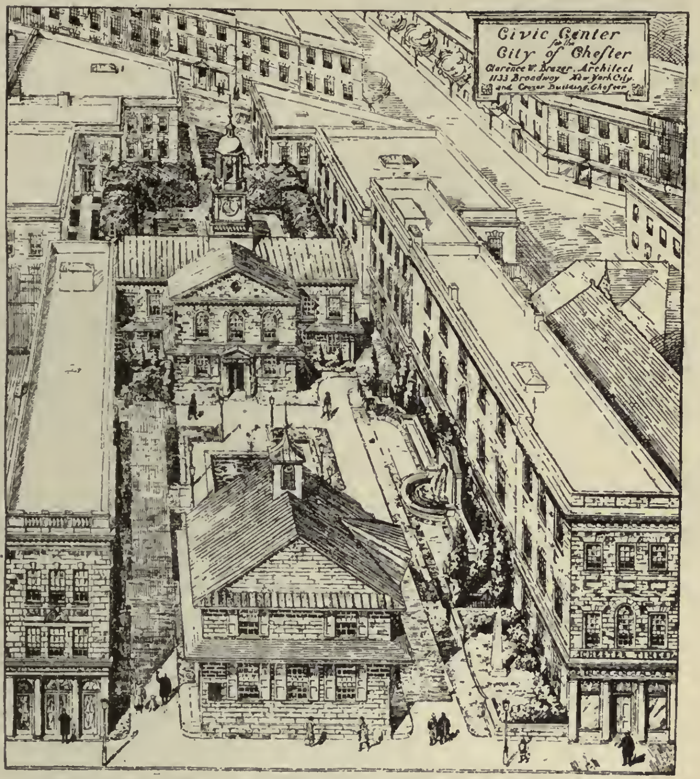
Public-minded citizens purchased the old Farmers' Market by subscription, and agreed to turn it over to the city in the event of its being needed for public purposes. Thus, before the land value had felt the surge of war's industrial expansion, it was possible to save the city at least one-half the present valuation of the property.

Following this, the Pennsylvania Historical Commission voted to act with the city of Chester in the restoration of the priceless old City Hall, and appropriated $5,000 toward the work. State Senator Sproul, however, in addition to scrapping the granite front of the neighboring *Chester Times* Building and erecting a new front and side to conform with the old architecture, has since generously offered to finance the restoration of the City Hall, costing over $12,000, entirely from his own resources.

The plan was given impetus by the project as mapped out by Brazer and Robb, of New York, and shown when their first plans for Deshong Park were submitted in the competition for that private enterprise.

Further development will be made nearer the railroad station where Market Street and Edgmont Avenue join, and back of this new center a slum district will give way to widened streets and to buildings of a new character. It is planned to extend the parking section along Chester River and to connect it with a recreation center or park where the river runs into the Delaware. But these latter schemes are in the future.

The general architectural and landscape plans finally selected were by Clarence Wilson Brazer, whose family has long been identified with Delaware County. The plans called for the erection of the new office building for the city in the rear of the property, and the restoration, line for line, of the old City Hall on its site in Market Street.


Civic Center
for the
City of Cheſter
Clarence W. Brazer, Architect
1133 Broadway New York City
and Crozer Building, Cheſter

SKETCH OF THE PROPOSED CIVIC CENTER FOR THE CITY OF CHESTER, PA.

The general scheme is shown in the accompanying reproduction of the architect's drawing. In the space between the two side buildings and the front and rear lines of the property, gardens will be formed as shown, altho at present there is some question as to the location of the memorial fountain. The new executive building will be in pure Colonial, and the stone work will match the old sawed ashlar of the ancient City Hall; in fact, the same ledge rock will be quarried. Few have had a chance to see the fine texture of the old masonry work because some time in the dark ages of the '70's a rustic-minded city official covered the beautiful ashlar with green paint, under a misconception of what was really fine.

In 1724, when Chester's City Hall was built, it was the most imposing public structure in the province. This fact may have had some influence in leading the old Pennsylvania Assembly—but five years later—to take preliminary steps for the construction of a State House in Philadelphia, which was finished in 1738 and later became Independence Hall.

The Chester City Hall was eighteen years older than the original Faneuil Hall in Boston, which was destroyed by fire. It was almost forty years older than the present "Cradle of Liberty," which was built in 1763.

The City Hall

As to the new City Hall itself, the first floor of the main building, on the north side, will be occupied by the City Treasurer, the City Clerk, the Commissioner of Finance, with a private office for that official, the Assessors and Controllers and the Commissioners of Parks and Improvements. The Park Department will also be provided with a private office for the Commissioner. Directly opposite these offices, across the corridors on the south side of the building, will be a suite of offices for the Commissioner of Highways. Vaults for the new building will be on the north side. Modern lavatories will be in the rear.

On the second floor, facing Market

Street, will be the Council Chamber. The north wing offices will be occupied by the Mayor. The two offices in the northwest corner of the building have been assigned to the City Solicitor. The south wing will be occupied by the Department of Health, the Commissioner of Public Safety, the Building Inspector and the Plumbing Inspector. Each official will have a separate office. Lavatories will be on the south side.

The present plans of the Superintendent of Improvements call for the restoration of the historical City Hall, leaving an entrance to the new Municipal Building from Market Street on each side of the present City Hall.

The work is progressing slowly because of the present conditions of labor and material, but, despite this, the plans for the final linking up of the central part of the city with Crozier, Chester and Deshong Parks have been prepared in detail. When finally developed, the three parks will be connected with boulevards, and the meandering Chester River will be spanned by bridges. Along the drives a very fine residential section has already begun to spring up. A small community of several hundred model dwellings has been started by local capital across the bend in the Chester River south of Deshong Park. Its site was formerly an ice pond, in summer a bad breeding-place for mosquitoes.

Improving the Safety and Attractiveness of Electric Street Signs

Portland, Ore., Prohibits Unsightly Electric Signs and Prevents Blanketing

By H. E. Plummer
Inspector of Buildings, Portland, Ore

AFTER spending nearly three years studying the electric sign problem in Portland, the Department of Public Works assisted a special committee, appointed to consider electric street signs, in framing and securing the passage of an ordinance to protect the artistic features of electric signs, as well as the pedestrian and the man displaying the sign, and to require ample illumination of the sign. The ordinance, which was passed only a few months ago, has some particularly strong features. One authorizes the Inspector of Buildings to use his judgment in approving signs as regards their attractiveness in appearance; another regulates the location and size of signs, to prevent the blanketing of one electric sign by another. In the August, 1917, issue of The American City, an article, on page 143, entitled "Survey of Illuminated Signs in Portland, Ore.," dealt with the first-named feature, namely, the result of the investigation of electric signs from the artistic standpoint. Much progress was made thru this investigation, and the following section of the ordinance was based on the results of the study:

"DESIGN OF SIGNS: No permit shall be issued for any sign which represents any article or thing which is of non-artistic nature, or which in itself is unsightly, grotesque, of offensive character or a monstrosity, it being the intent and purpose of this ordinance that all signs constructed over sidewalks shall be attractive in appearance. Any person who feels aggrieved by the refusal of the Inspector of Buildings to issue a permit as herein provided may appeal to the Council for relief from the action of said inspector."*

Under the head "Definitions," the new ordinance defines "blanketing" as meaning the partial or complete shutting off from view of any portion of the face of a sign when viewed by an observer from a point 60 feet away, with the eye of the observer 5 feet above the sidewalk. The portion of the ordinance dealing with this section bears the title "Location of Signs." It reads as follows:

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* If no right of appeal to the Council were introduced into the ordinance, it is probable that the right of the Inspector of Buildings to approve signs for appearance would be ruled illegal by the courts.

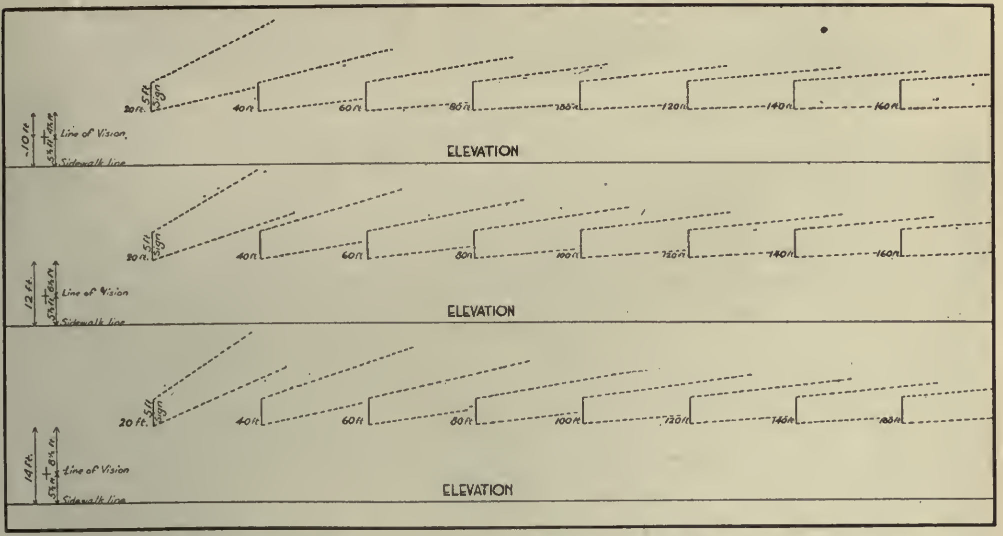


DIAGRAM SHOWING THE LINES OF VISION AND THE BLANKETING EFFECT OF SIGNS AT VARIOUS DISTANCES FROM THE OBSERVER

"No horizontal sign shall be erected in such location that the same will, when viewed 60 feet away, with the eye of the observer 5 feet above the sidewalk, blanket another sign 80 feet away, of the same distance above the sidewalk. A border not exceeding 3 inches in width may be blanketed without coming within the scope of this ordinance."

In order to further protect the city, a section was inserted in the ordinance stating that all signs erected within the fire limits must be constructed of metal not lighter than No. 28 U. S. steel gauge, or other non-combustible material. In order to protect the pedestrian, the ordinance provides that glass in which wire mesh is embedded shall not exceed 720 square inches in area, or 48 inches in any dimension for one piece. Glass in which wire mesh is not imbedded must not be less than ¼-inch in thickness and must not exceed more than 50 square inches in area for any one piece, except where letters or numerals made of glass have a surface covered by metal. Further protection of pedestrians is provided by the requirement that all signs be supported from the building with proper metal supports, which, when attached to a masonry wall, must be secured by expansion bolts or anchor bolts and laterally fastened with guy wires by adjustable turn buckles.

The following table covers the allowable height of horizontal signs and makes it unnecessary for a sign builder to perform any calculation covering blanketing.

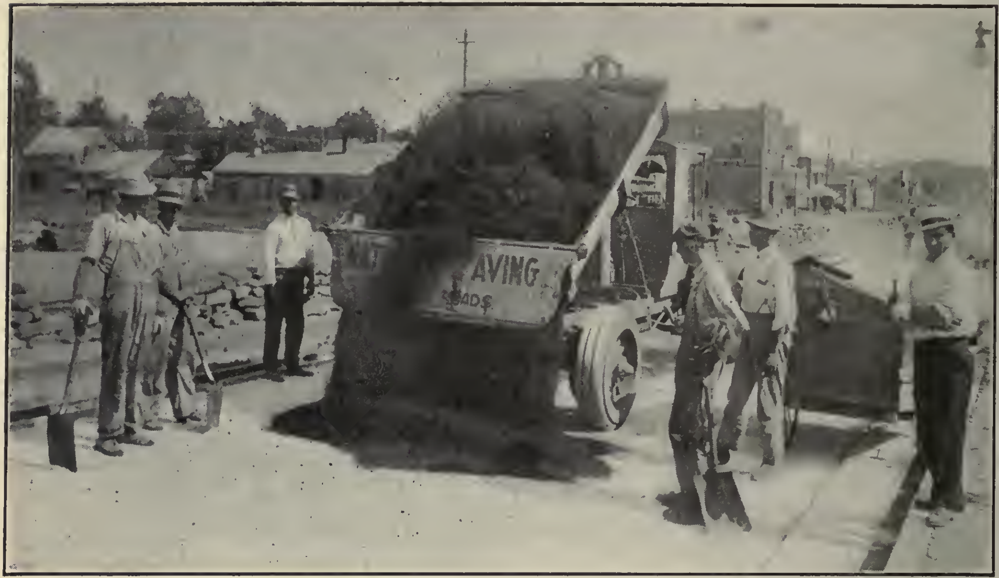
Distance of Lower Line of Horizontal Signs Above the Sidewalk, Feet	Maximum Height of Horizontal Signs, Inches
10	24
11	27
12	30
13	33
14	36
15	40
16	44
17	48
18	52
19	54
20	54

It is provided that no vertical signs shall project more than six feet beyond the property line, and that the lowest part of any vertical sign shall not be less than 15 feet above the sidewalk. No horizontal sign can be erected within 20 feet of another similar sign, measuring from center to center of the signs, when any portion of the second horizontal sign is in the same horizontal plane as the adjacent sign.

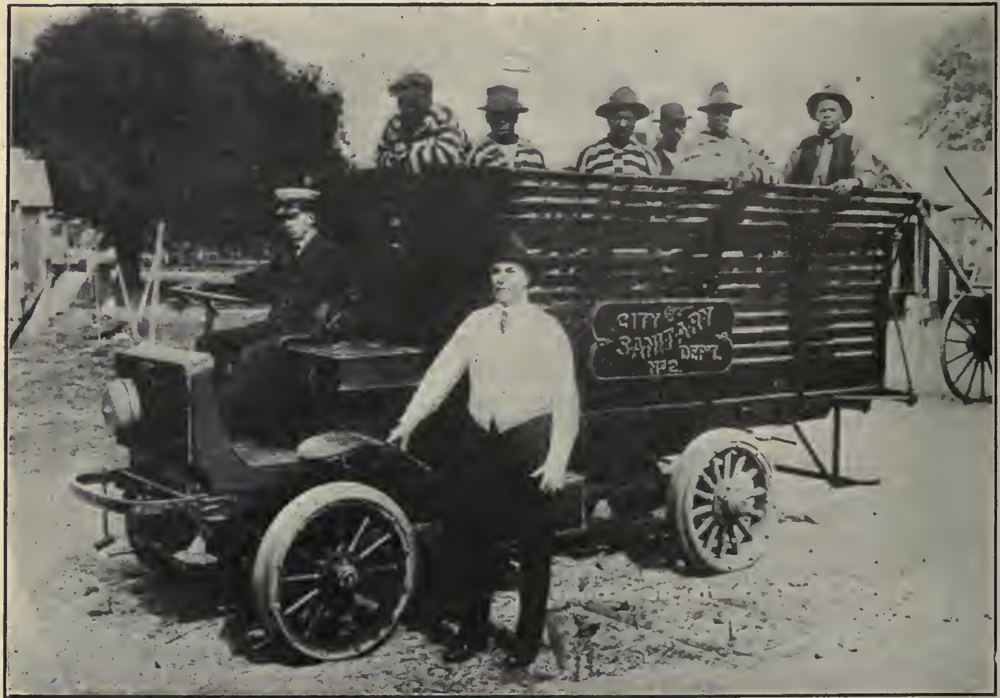
The ordinance is replete with specific data providing for the proper illumination of signs so that they are attractive, and for their proper fastening so that they will not swing with the wind. There is also a provision that they be properly maintained, and cleaned or painted once a year.

The author will be glad to furnish copies of the ordinance to any readers of THE AMERICAN CITY who are interested in this matter of improving electric signs.

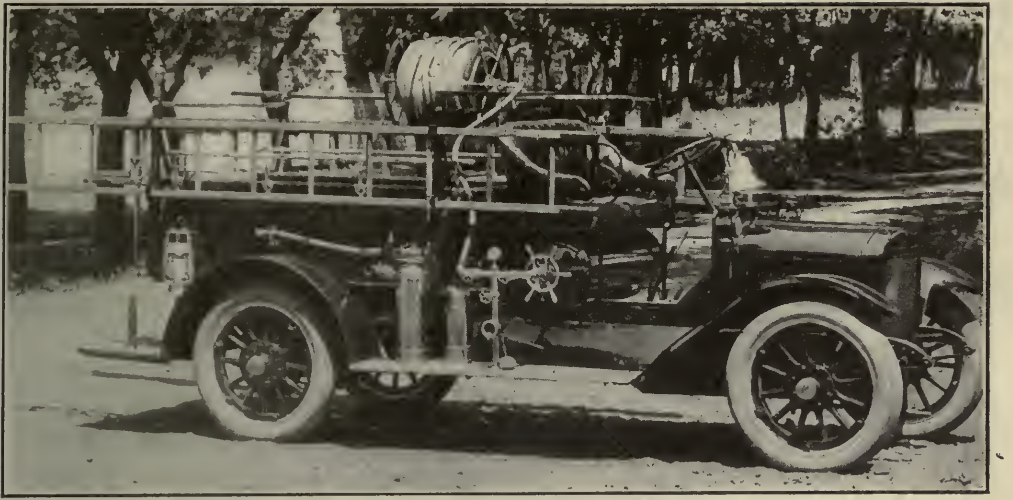
The Motor Truck in Paving, Sanitary, and Fire Department Service



AN INDIANA TRUCK ON A PAVING JOB IN PITTSBURG, KANS.



AUTOCAR USED BY THE CITY SANITARY DEPARTMENT, TAMPA, FLA.



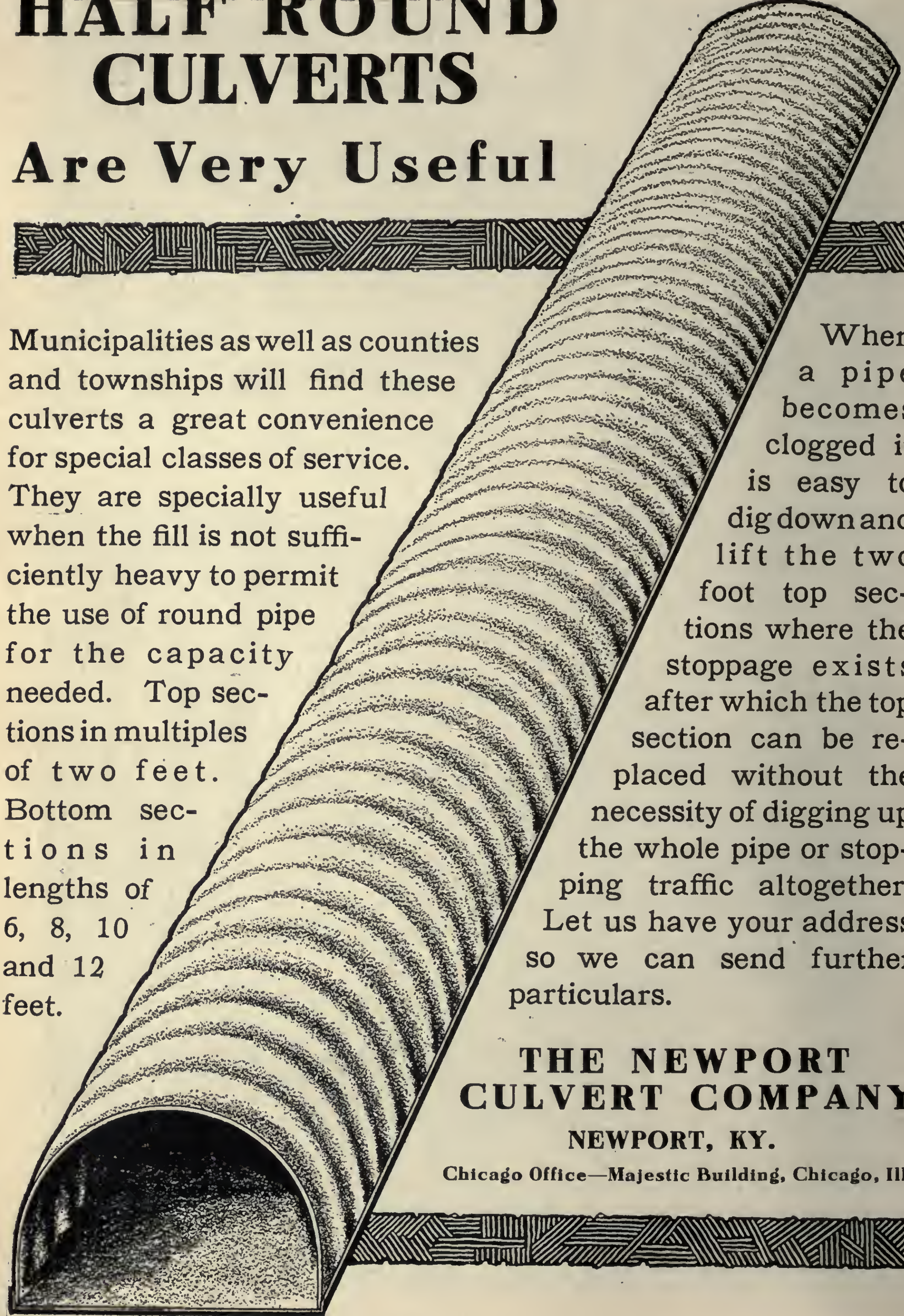
A ¾-TON GMC FIRE TRUCK IN SERVICE IN MITCHELL, NEBR.

THIS AHRENS-FOX PUMPER TRAVELED 111 MILES FROM HAVANA, CUBA, TO FIGHT A SUGAR FIRE

With a fire raging at Cardenas, Matanzas, nearly 111 miles from Havana, this machine left Havana under its own power, and made the trip over all kinds of roads in 5 hours and 10 minutes. Then it threw two streams of water on the fire continuously until it was extinguished, 24 hours and 10 minutes later

HALF ROUND CULVERTS

Are Very Useful



Municipalities as well as counties and townships will find these culverts a great convenience for special classes of service. They are specially useful when the fill is not sufficiently heavy to permit the use of round pipe for the capacity needed. Top sections in multiples of two feet. Bottom sections in lengths of 6, 8, 10 and 12 feet.

When a pipe becomes clogged it is easy to dig down and lift the two foot top sections where the stoppage exists after which the top section can be replaced without the necessity of digging up the whole pipe or stopping traffic altogether. Let us have your address so we can send further particulars.

THE NEWPORT CULVERT COMPANY
NEWPORT, KY.
Chicago Office—Majestic Building, Chicago, Ill.

A Community Market That Operates a Motor Truck Delivery System Direct to Neighboring Cities

By W. A. Carpenter

IN April, 1918, the community market of Adrian, Mich., was organized, with a very modest capitalization, the stock being apportioned in small blocks among Adrian business men and near-by farmers. The market was not designed as a money-maker so much as to provide a clearing-house for produce—to link up the grower and the dealer, and, eventually, the ultimate consumer. W. G. Braden, an experienced produce buyer, who has made a success of a similar undertaking in Minnesota, was appointed manager. A vacant mill property, centrally located, was secured, and the market was ready for business.

From the outset, anything in the line of farm products having a merchantable value was purchased, in any quantity, from a dozen eggs or a chicken to a thousand bushels of potatoes or a whole beef. It took a little time to get the project established, but the farmers were quick to realize the advantage of having a central receiving station to which they could drive direct and get cash for whatever they had to sell, for the average market price, without having to peddle their wares from store to store and often take the proceeds out in trade. In a short time the supplies began to pour in at such a rate that the local market was outgrown, and it was necessary to seek an outlet for the surplus elsewhere. Thirty-five miles to the east lay Toledo; twice that distance to the northeast was Detroit.

At first, shipments were made by rail, but the disadvantages of this method speedily manifested themselves, particularly with the class of products handled, and a different method of transportation became a necessity. Eggs and live chickens were shipped in great quantities. The methods of handling by the express companies were none too gentle, and a considerable discount for breakage always featured shipments of eggs. Likewise, if an incautious chicken chose to poke its head thru the crate at the moment when another crate was being deposited atop, there was a dead bird for which no payment was made. Various other drawbacks, not the least of which were the heavy express charges and slowness of delivery at destination, led Manager Braden to install a 2-ton Acme truck, doing away entirely with railroad service. This truck has now been in service about 8½ months, making four and five trips per week to Detroit, a round-trip distance of 140 miles, and one to Toledo, the latter a 70-mile round-trip distance. During these 8½ months this truck has hauled more than $80,000 worth of products, the greater part of it foodstuffs from the farm.

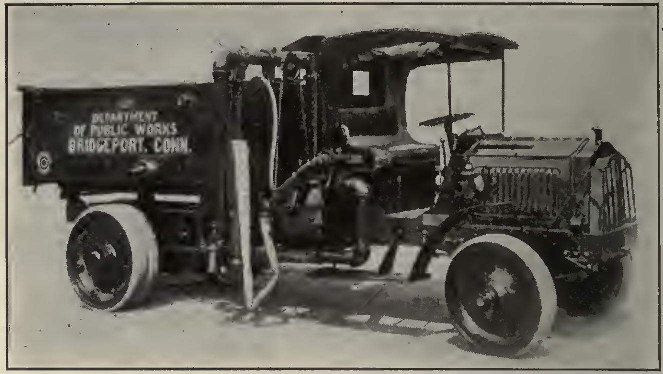
Manager Braden deals direct with produce men in Detroit, the stuff being laid down at their warehouses ready to resell while it is absolutely fresh. No attempt is made to pick produce up along the line, because it is essentially thru-service for the benefit of the Adrian community market. The average time for a one-way trip to Detroit is around six hours, altho upon occasion this has been cut down close to four.

Detailed accounts of cost of operation have been kept from the beginning. Based on these, here is a statement of a round-trip run to Detroit compiled by Manager Braden:

LIABILITY	
Driver, round-trip	$6.00
Gasoline	4.74
Oil	.75
Manager	5.00
Insurance	2.00
Repairs	4.00
Interest on investment, about	1.00
Depreciation	3.00
Meals for driver	1.50
	$27.99
Surplus on average trip	16.26
	$44.25

ASSETS	
Express on load equal to	$29.25
Saving on shrinkage, about	10.00
Saving on coops	2.00
Return hauling	3.00
	$44.25

Remember this—



The Otterson Auto Eductor

quickly and economically cleans catch basins, and privy vaults and unwaters trenches, also used for

Sinking Bridge Caissons

The Otterson Eductor may include this type of work in its rapidly extending field with its typical economy and speed.

Cleaning Grit Chambers

One of the mean jobs at a sewage treatment plant is cleaning the grit chamber. The Otterson Eductor can handle this quickly in addition to its other daily work.

Removing Septic Tank Sludge

This is usually a long tedious process but becomes speedy and minus its usual discomforts when done with the Otterson Auto-Eductor.

EQUIPMENT MOUNTED ON ANY 5-TON CHASSIS OF SUITABLE STANDARD MAKE

THE OTTERSON AUTO-EDUCTOR COMPANY

817 Fairbanks Building **Springfield, Ohio**

MORE THAN $80,000 WORTH OF PRODUCTS HAVE BEEN HAULED BY THIS TRUCK WITHIN 8½ MONTHS

Saving on shrinkage is due to several causes, not the least serious of which was the killing of chickens in transit. On a single express shipment, allowance had to be made for as many as thirteen that arrived at their destination dead, and rarely was only one registered. There was a considerable breakage on eggs, and deductions were made by commission men for vegetables and fruit that had deteriorated.

Return hauling represents the earnings on shipments from Detroit or intermediate points to Adrian. This item is small, but it has been due to inability to interest local merchants in having their foods sent in this manner, altho with the establishment in Detroit of a return loads bureau, and missionary work at the other end of the line, it is expected to materially increase this showing.

"There are certain important features of a trucking proposition such as ours that cannot be tabulated in cold figures," says the manager, in discussing the project and its development. "First of all, there is a great deal more satisfaction, because you are enabled to treat directly with the commission man, and there is no chance for argument on either side. Under the old system there was constant haggling with some of our customers, altho with others our relations were the best. There would be demands for allowances because of breakage or deterioration, and we had no way of checking up on these demands, with the result that there was a very material shrinkage, as the table shows.

"There was the matter of hides, for example. It is an unwritten rule among commission men that the very first thing to do is to deduct two pounds on every hide offered for sale. After that, they settle on the market basis. Now, with hides at, say, 15 cents a pound, that is a pretty fair profit to the buyer right at the outset. Then there was always a chance for argument on the quality of the hide. Naturally, we were never overpaid. With our driver on the job there is no two-pound deduction. We are paid for full weight.

"There is another important consideration, and that is the ability to take advantage of current market prices. If a dealer orders twenty-five cases of eggs from you, say, on Friday, to be shipped by express, if the price is higher Saturday than Monday he will settle on Monday's basis.

"Often, too, there is a material advantage because of ability to supply a want in a hurry. Recently a Detroit commission firm called us by telephone and wanted a shipment of chickens, offering us 1¼ cents a pound above the current quotation if they were laid down to them the next morning.

Rideout Road, Toledo, Ohio. All during 1918 this road was traversed by Army trucks being driven to the Atlantic seaboard. Macadam road resurfaced with "Tarvia-X" in 1913 and treated with "Tarvia-B" in 1916 and 1918.

Total amount invested in this road for 18 years now saved every 10 months!

THIS is Wood County's heaviest traveled road. All automobiles and motor trucks in transit overland around the western end of Lake Erie from Detroit and Toledo to the East must drive over this highway. In fact, most of the overland motor traffic to the South also takes this route.

Mr. John F. Gallier, County Surveyor of Wood County, recently figured that this highway carries 2,000 tons per day for its entire length of 7.36 miles, or more than 5,330,000 ton-miles per year!

This road is a Tarviated highway, and in a very interesting article Mr. Gallier develops the fact that *every ten months* the saving in the cost of operating motor traffic over this highway, as compared with that on a well-drained clay road, *equals the total investment in the road for the past eighteen years.*

Space is too limited to give Mr. Gallier's figures in detail, but a copy of the article, which gives the history and maintenance figures of the road since 1900, will be sent to any interested road engineer or taxpayer upon request.

Briefly, the total investment in the road for 18 years, including three Tarvia treatments, is $99,367.63, or a trifle more than $13,500 per mile.

Figuring carefully and conservatively, Mr. Gallier has worked out the difference in cost of gasoline, tires and oil alone (not taking into account the saving in wear and tear on automobiles and trucks), for traffic over the Tarvia road as compared with the same traffic over a well-drained clay road. Reduced to totals, the figures are:

Total average daily cost of gasoline, tires and oil for motor traffic on clay road	$714.62
Total average daily cost of gasoline, tires and oil for motor traffic on Tarvia road	381.73
Daily difference in favor of Tarvia road	$332.89
Difference for 365 days	$121,475.85

This means a saving of $10,122.98 per month, or $101,229.80 every 10 months, which is more than the improved road cost to build and maintain for 18 years, including interest, engineering and drainage costs!

Tarvia is ready to serve other communities as it is serving this one, helping them to build and maintain mudless, dustless, automobile-proof roads at low cost—*roads that pay for themselves—roads that are an asset instead of a liability.*

Descriptive booklet telling all about this interesting proposition free on request.

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Preserves Roads~Prevents Dust

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THE BARRETT COMPANY, Limited: Montreal Toronto Winnipeg Vancouver St. John, N.B. Halifax, N.S. Sydney, N.S.

A little while afterward our truck was on the way with the load, and we were able to take advantage of the bonus offered. That serves to illustrate one of the possibilities."

The plant is equipped with small refrigerators for handling cream, of which large quantities are purchased, butter and other perishables, with storage rooms and candling apparatus for handling eggs expeditiously. Everything is on a cash basis, the farmer being paid for his produce upon receipt, and local merchants paying cash for whatever they buy from the market. This effects a considerable saving in clerical work.

A Mammoth Open-Air Swimming Pool

Artificial Beach and Excellent Bathing Facilities Provide Comfort for Many

THE village of Agawam, Mass., has one of the largest open-air swimming pools in the world. It measures 300 feet in diameter, and has a capacity of 2½ million gallons. The bottom slopes from very shallow water to a depth of five feet, dropping to eleven feet in the immediate vicinity of the diving platform. The pool is of concrete construction, and is circular in shape. A broad strip of sand runs round the edge, as the illustration shows, affording an ideal playground for children, as well as a basking-place.

THE LARGE OPEN-AIR SWIMMING POOL AT AGAWAM WHERE THOUSANDS OF SPRINGFIELD, MASS., CITIZENS ENJOY THE BATHING FACILITIES

The pool is fed thru a filtering system installed by the New York Continental Jewell Filtration Co., and tests have shown the water to be of high quality. Water is constantly flowing into the pool at such a rate that it cannot become foul. The excess water is carried off by an overflow that completely encircles the pool at its border.

A very effective lighting system has been installed for night bathing. At equal distances surrounding the pool are six floodlight projectors, and in the center of the pool is a cluster of sixteen 2,000-candlepower lamps. The combined power of these and the border lights renders every part of the pool almost as light as day, and forms a very effective display.

Modern bath houses accommodating 3,000 at one time are in the pool, and afford hot and cold showers, toilet accommodations and other up-to-date facilities. Two convenient features operated in connection with the bath houses are the laundry and the drying-room, where rented suits are laundered.

Atho the depth of the pool is such as to insure almost absolute safety to bathers, a life-guard with a small boat is kept on duty all the time.

Highest Efficiency in Water Works Practice

All water meters should be tested before they are installed, and periodically thereafter, to prove their accuracy. A defective meter may actually lose the water company or the city hundreds of dollars in revenue — by under-registering the amount of water consumed.

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are made from the best materials with the well known MUELLER precision of manufacture—in single and multiple construction—and are recognized as having the highest efficiency in water works practice.

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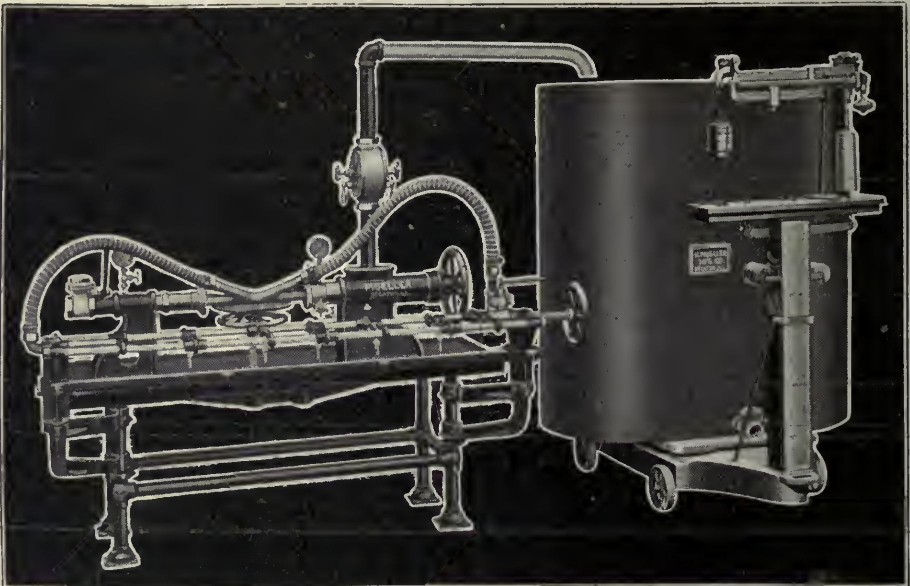

News and Ideas for Commercial and Civic Organizations

The International Club of Dallas

DALLAS, TEX.—The object of the International Club, which has existed in Dallas since the fall of 1918, is, as stated in its constitution, to "associate representatives of different racial descent in a mutual study and discussion of the peoples and nations of the world, their characteristics, manners and customs, as well as their art, literature, industry and national aspirations." The degree in which the races assimilate American civilization depends largely upon the point of view regarding our country obtained by the newcomers after reaching our shores. Their adjustment to the American ideal is simplified when Americanization work is predicated on the knowledge which this International Club is seeking to supply thru contact and friendly discussion.

The Club meets monthly in the headquarters of the Civic Federation of Dallas. Its membership is limited to two of each race or nationality. Each member may invite a guest. At present, Japan, Italy, Russia, France, England, Mexico, Switzerland, Holland, Greece, Syria, Sweden and the United States are represented. Hon. Rhodes Baker is President and K. Fukushima is Vice-President. The Executive Secretary of the Civic Federation of Dallas is Secretary of the Club.

The nucleus of a library has been formed. The American Association for International Conciliation, of New York, has been most generous and helpful in supplying books and other literature.

Three typical programs were those followed at the meetings of January, February and March, 1919: "The Russia of To-Day"; "Present Racial and Territorial Problems of Europe"; and "Labor Aims and Programs, National and International, as Typified in Russia, England, Japan and the United States."

The President, Mr. Baker, has well stated the functions of the Club, which are twofold—mutual intellectual profit for the members and the promotion of a better understanding of the motives actuating national policies. Both are processes of eliminating the word "foreigner" from the national language. The organization is seeking to expand provincial thinking into tolerance and rational understanding, and will encourage the presentation to the Dallas public of authoritative speakers on international affairs and relationships.

ELMER SCOTT,
Secretary, The International Club of Dallas.

Sacramento Votes Bonds for Water Filtration Plant

SACRAMENTO, CAL.—On June 26, 1919, by a vote of 7,065 to 3,122, the people of Sacramento decided in favor of issuing bonds for a water filtration plant. This goal was attained after years of endeavor and a most vigorous campaign by the Sacramento Chamber of Commerce. For fifty years Sacramento has been using the "raw" water from the Sacramento River. Until 1915, when a chlorination plant was installed, this water was a most dangerous source of typhoid epidemics. Chlorination effectively checked the disease, but the derogatory advertising given the city because of the extremely turbid nature of the water could not be overcome. The proper growth and expansion of the city was noticeably hampered, new residents and new industries being kept away by the objectionable water-supply.

The new president and secretary of the Chamber of Commerce realized that a clear and pure water-supply was absolutely essential to the development of the city, and they took steps at once to remedy the condition. A consulting engineer of San Francisco was employed to make an investigation and report, and in April, 1919, he made known his findings, which included a recommendation that a filtration plant be in-

Permanent TRADE MINWAX MARK Protection

YOU can less afford to experiment with waterproofing than with any other factor in engineering construction. And you don't need to—you can be sure. Records of 14 years prove the permanent protection of Minwax—it is a known quantity in engineering construction. The cost? The least per square yard per year of service. Write for Bulletins 11, 12, 13 and 14.

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stalled as the best and most logical solution of the water-supply problem. His recommendation sustained the judgment of three other engineers who in 1916 had made a most exhaustive investigation of Sacramento's three possible sources of water-supply—filtered river water, a mountain water-supply, and a supply from an underground or well system. They recommended filtration.

In an exhaustive campaign of advertising and publicity, the Chamber of Commerce completely overcame the opposition to filtration arising from those who favored either a mountain water project or a system of wells. This publicity was not confined to the newspapers, but every conceivable means of putting the proposition forcefully before the public was employed. Billboards, window cards and motion picture theaters played a big part in the campaign. A motion picture scenario, strictly local in its nature, was written and filmed. This was a splendid means of contrasting the advantages and disadvantages of clear water and dirty water, respectively. Motion picture slides on the subject were shown in all the theaters. Samples of filtered and unfiltered water were secured from Cincinnati, St. Louis, Baltimore and New Orleans, and these, placed side by side in a window on the principal business street, convinced the people that filtration was not only practical, but was actually producing splendid results in certain large cities in the United States. Speakers presented the subject to many public gatherings. A poster with the words "Remove the Stain" and carrying an appeal to the civic pride of the citizens flared forth from windows and auto windshields. Huge signs covering both sides of a street car which ran over all the lines in the city had the effect of awakening the people to the issue facing them. A special "clear water" song was written and sung by the Chamber of Commerce male quartet in all parts of the city. A special "clear water" recitation given by a Sacramento youngster carried an appeal from the children's viewpoint. All these had the effect of creating a momentum of public opinion that swept away practically all opposition. The women were particularly interested in the campaign, since they suffered the greatest inconveniences from the muddy water. They voted almost unanimously in favor of issuing the filtration bonds.

POSTER USED IN THE CLEAR WATER CAMPAIGN IN SACRAMENTO, CAL.

The filtration and pumping plant will cost approximately $2,000,000 and will cover forty acres of land. The intake will have a capacity of 100,000,000 gallons daily, and the filters will have a daily capacity of 30,000,000 gallons. The capacity of the latter may be increased as the growth of the city demands. Sulphate of alumina is to be used as a coagulant. Construction work is to be started at once, and the plant is expected to be in operation before the close of next year.

IRVIN ENGLER,
Publicity Director, Sacramento Chamber of Commerce.

Ten-Story Penn-Harris Hotel Built by the Community

Harrisburg, Pa.—The newly opened Penn-Harris hotel in Harrisburg is a monument to the civic pride of the capitol city of Pennsylvania. It offers not only unrivaled facilities for the entertainment of conventions, but provides a community center for the assembling and entertaining of Harrisburg's residents. It fronts on Capitol Park and is one of a number of public buildings that are to be erected on sites facing the park and the capitol. The project involves an expenditure of $1,420,000. The lot cost $230,000, the building and equip-

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A Watson Wagon is second to none. They can help you expedite your road building and all other construction work.

They are sturdy and stand up under all loads and on all roads.

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Successors to Watson Wagon Co.
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ment $995,000, and the furniture and furnishings $195,000.

The campaign for the erection of the hotel was launched and carried thru to a successful issue by the Chamber of Commerce, with the loyal support of the public-spirited citizens of the community. When it became apparent that outside capital would demand such exorbitant terms that the city would be the loser in the transaction, the Harrisburg Hotel Company was organized and incorporated. The Commonwealth Trust Company of Harrisburg agreed to advance one-half the cost of the hotel on first mortgage bonds if the other half were subscribed in cash. The stock was accordingly put on sale and was quickly taken up by the citizens. It is held by 427 stockholders, practically all of whom are residents of Harrisburg, or were when the project started, and have retained their shares even tho subsequent events caused them to leave the city. Three local business men each subscribed for $80,000 worth of the stock, three others took $25,000 each, and one individual took a block of $55,000 worth.

The hotel is operated by the United Hotels Company, which leases it from the owners, the Harrisburg Hotel Company. The latter holds 49 per cent of the common stock of the operating company.

An interesting feature of the campaign for the erection of this community hotel is that the popular subscriptions that built it were secured with the understanding that the hotel would sell no liquor. On this basis the stock found a ready sale in Harrisburg, which is surprising in view of the fact that the prospects at that time of the adoption of the national prohibition amendment had not become manifest.

The hotel is ten stories high and has 250 rooms, nearly all with bath. It covers a lot 17,000 feet square. A luxurious lounge, a ball room of pure Adam style, an assembly room adjoining, several private dining-rooms, a handsome grill in the basement, and numerous parlor suites round out the magnificence of the hotel. The first night it was open all the available rooms were occupied, and the accommodations for dancing, dining and other social functions had been engaged two months in advance, so that the people who owned stock in the company had no misapprehensions as to whether they would receive dividends upon their investment.

Rapidly mounting prices attendant upon the nation's participation in the war heaped numerous difficulties upon the builders, but the enterprising Chamber of Commerce men insisted on its completion despite the obstacles. The construction projects that were being carried on by the War Department and the huge shell plants that were being operated in and near the city nearly drained the community's man power, but the work went on, the building rising story by story until its ten complete floors were reared above the flanking buildings.

THE PENN-HARRIS HOTEL IN HARRISBURG, PA.

WARREN R. JACKSON,
Secretary, Harrisburg Chamber of Commerce.

Seattle's Industrial Survey Being Made by Students

Seattle, Wash.—By making an intensive survey of her industrial resources and possibilities, Seattle has prepared for the post-bellum reconstruction period which will tax the industrial stability of the country to the utmost in the next eighteen months. With the cessation of war contracts, the city was confronted with a possible large surplus of workers along various industrial lines and with a wealth of raw materials. As a re-

Now is the Time to Sprinkle Your Streets

STUDEBAKER builds horse-drawn sprinklers, as well as units that can be mounted on standard makes of motor trucks.

Studebaker

South Bend, Indiana

Largest Vehicle Manufacturers in the World—Established 1852

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sult of the survey, the city expects to keep busy and even to increase its army of industrial workers.

Thru the Industrial Bureau of the Seattle Chamber of Commerce and Commercial Club and the University of Washington, a survey of opportunities is being made along more than fifty different lines. Among them are iron and steel products, the development of pulp resources and the tanning industry.

Just how Seattle attacked the problem is interesting. Thirty-five graduates and seniors from the College of Business Administration and the Department of Industrial Chemistry were enrolled in a special seminar course and used the city and the surrounding country as a laboratory. Each group of students was assigned one industry. Interviews supplemented by intensive research and a survey of the field gave them a grasp of the situation as it existed in Seattle. The problems were attacked from every angle. An experienced business man, who is a college graduate, represented the university. The directing of the survey was carried on thru the Industrial Bureau's offices, in order that it might at all times follow strict business principles. Experts in each line were consulted; separate surveys of raw materials were conducted, and the result is that Seattle has laid the foundation for an intensive industrial opportunity inventory.

With the city's vast foreign trade, embracing South America, Australia and all of the Orient, as well as Siberia and Alaska, markets are constantly being opened, new sources of raw materials are being found, and Seattle is collecting these facts and adding them to the city's manufacturing catalog.

The survey has been arranged in three phases: the local, which embodies the work of the students and the Industrial Bureau; the eastern, which is covered by an engineer and public-spirited business man; and the comparative, which will show definitely Seattle's present and future advantages along each specific line in comparison with its eastern competitors. Raw materials, markets, sales expense and labor are being investigated. In fact, all the information that can be used as a basis for comparison is being gathered. It is expected that the facts collected will be published in bulletin form by the University and the Chamber of Commerce for distribution.

Using the data thus assembled, the Industrial Bureau has planned to launch a nation-wide campaign to interest the right men with experience and capital in the profitable openings for manufacturers in Seattle.

I. R. A. CURRY,
Industrial Bureau, Seattle Chamber of Commerce and Commercial Club.

Cincinnati's Bureau of Industrial Counseling

CINCINNATI, OHIO.—The Cincinnati Chamber of Commerce recently organized a Bureau of Industrial Counseling whose purpose is to offer to employers information and consultation service on all phases of employment problems connected with women in industry. The steps leading to the organization of this plan are significant. During the war the Ordnance Department realized that in order to keep production at a maximum it was necessary to provide the machinery for labor adjustments. To meet this need, the Industrial Service Section was organized and placed under the Production Division. It was the function of this section to act as a mediator in smoothing out and regulating all conditions that were obstructing labor efficiency. Adjustments in shop conditions, recruiting, training, transportation, housing, and labor disputes, all came within its jurisdiction. A special branch was provided for handling problems relating to women employes.

The Cincinnati Chamber of Commerce felt that the principle of this work—good labor conditions for efficient business—was a basic one in business life, and that it would be valuable to conserve for local use in Cincinnati as much as possible of the material and experience that had accrued during the war. Hence the present Bureau of Industrial Counseling.

The work is being organized and directed by Miss Edith Campbell, who was supervisor of the Women's Branch in the Cincinnati District of the Ordnance Department. She comes equipped with valuable experience in that work, and in the activities of the Schmidlapp Bureau for Women and Girls, of which she has been director since its foundation by J. G. Schmidlapp in 1907. This bureau has initiated and furthered a number of civic and educational plans for women and is

HANDLING the mails in Christiania, Norway, or flushing the streets in Caldwell, Idaho—doing the most exacting tasks, the world over—Denby trucks are, day in and day out, giving dependable, economical service.

For Denby Trucks combine, in an unusual degree, the two prime requisites of good truck performance,—the ability to give continuous service under all conditions and to operate at a cost that makes them an investment that pays big dividends.

The oval shows part of the post office fleet operating in Christiania, Norway. The other illustration, a 4 ton Denby owned by the City of Caldwell, Idaho.

Built in All Capacities From 1 Ton Up

Denby Motor Truck Company, Detroit

DENBY

MOTOR TRUCKS

now making possible this new enterprise for the Chamber of Commerce.

The work of the Chamber of Commerce bureau centers about four points:

1. Giving confidential advice after study of problems in the individual plants
2. Rendering assistance in selecting women supervisors for industrial establishments and in organizing their duties
3. Giving information on successful employment methods
4. Securing expert advice from cooperating organizations

C. R. HEBBLE,
Executive Secretary, Cincinnati Chamber of Commerce.

New Bulletins

COLUMBIA, S. C.—*The Courier*, the official monthly bulletin of the Columbia Chamber of Commerce.

KEY WEST, FLA.—*Key West Breezes*, the official monthly bulletin of the Key West Chamber of Commerce.

KNOXVILLE, TENN.—*The Bulletin*, published monthly by the Knoxville Board of Commerce.

MARSHALL, TEX.—*Marshall*, the official monthly bulletin of the Marshall Chamber of Commerce.

ROANOKE, VA.—*A Letter to The Members of The Association of Commerce*, issued by the Roanoke Association of Commerce.

Recently Issued Printed Matter

ALBANY, N. Y.—"Albany Welcomes You" is the title of a booklet recently issued by the Albany Chamber of Commerce. The "Bull's Eye Bulletin of Albany's Industries" is the title of another booklet issued by the same organization.

CINCINNATI, OHIO.—The Cincinnati Chamber of Commerce and Merchants' Exchange has just issued its Seventieth Annual Report, for the year ending December 31, 1918.

DALLAS, TEX.—The Metropolitan Development Association of the Dallas Chamber of Commerce has issued a prospectus of its work entitled "Dallas—The Metropolis of the Southwest."

HAZLETON, PA.—The Secretary of the Hazleton Chamber of Commerce has issued his annual report.

JOLIET, ILL.—The Joliet Association of Commerce has issued its annual report for the year ending May 31, 1919, entitled "Activity of the Joliet Association of Commerce."

PARIS, ILL.—The July issue of the Paris *Chamber of Commerce Bulletin* contains an account of "What the Chamber of Commerce Has Accomplished During the Past Six Months."

ST. LOUIS, MO.—"A Review of the Work of the Charities Bureau" of the St. Louis Chamber of Commerce has recently been published by the Chamber of Commerce.

SAULT STE. MARIE, MICH.—The Fourth Annual Report of the Civic and Commercial Association of Sault Ste. Marie, for the year ending June, 1919, has been issued.

THE OHIO COMMERCIAL SECRETARIES' ASSOCIATION.—The proceedings of the third annual convention of the association, held in Akron, Ohio, May 16-17, 1919, has been issued.

Changes Among the Secretaries

A list of the recent changes and new appointments occurring among the secretaries of commercial and civic organizations thruout the United States.

Readers are asked to notify the Editors of such changes as soon as they occur, in order that the list may be made as complete as possible each month.

J. M. ASHLEY has resigned the secretaryship of the Valdosta, Ga., Chamber of Commerce, to accept the position of manager of the Lowndes County Market Association.

H. C. BEDELL is the new secretary of the Commercial Club at Hale, Mo., succeeding Blain W. Good.

E. D. BEVITT, of Jamestown, N. Y., has been elected secretary of the Board of Commerce at Lockport, N. Y., succeeding Raymond B. Gibbs, who has resigned to accept the secretaryship of the Chamber of Commerce at Kansas City, Kans.

L. G. BRADSTOCK has been elected secretary of the Wellington, Ohio, Chamber of Commerce.

T. J. BROWN has resigned the secretaryship of the Chickasha, Okla., Chamber of Commerce.

R. W. BUDD, of Waterbury, Conn., has been elected secretary of the Chamber of Commerce at Okmulgee, Okla.

FREDERICK W. BURTON has been appointed Traffic Director of the Rochester, N. Y., Chamber of Commerce, succeeding D. P. Chindblom.

J. H. CALDWELL is the new secretary of the Commercial Club at Mammoth Spring, Ark.

W. T. CANAN has been appointed assistant secretary of the Altoona, Pa., Chamber of Commerce.

GEORGE E. COMER, formerly assistant secretary of the Bristol, Va.-Tenn., Chamber of Commerce, has been elected secretary of the Carrollton, Ga., Chamber of Commerce.

HARRY E. COVEY has been elected secretary of the Kansas, Ill., Commercial Club.

GEORGE H. COX has resigned the secretaryship of the Kenton, Ohio, Chamber of Commerce, to assume the secretaryship of the Board of Commerce at Troy, Ala.

WALTER A. DOWLING has been appointed secretary of the Cisco, Tex., Chamber of Commerce. Mr. Dowling was formerly assistant secretary of the Chamber of Commerce of Tulsa, Okla.

ROAD WORK MADE EASY

BURCH STONE SPREADER

IT SHOULD be used on all road-building work. Simply attach the **Spreader** to a truck and an even depth of stone is distributed. Does away with hand spreading. Saves time, money and material. Machine pays for itself in short time. It is part of the necessary equipment for the road department.

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Literature upon request

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Carl Dodds has resigned the secretaryship of the Chamber of Commerce at Maysville, Ky., to assume the secretaryship of the Board of Trade at Northampton, Mass.

W. D. Driscoll has tendered his resignation as secretary-manager of the Waco, Tex., Chamber of Commerce, to become manager of the Oklahoma Traffic Association, with headquarters at Oklahoma City.

E. N. Farris has resigned the secretaryship of the Charlotte, N. C., Chamber of Commerce.

P. A. Fenimore has been elected secretary of the Mobile, Ala., Chamber of Commerce. Mr. Fenimore was formerly secretary of the Chamber of Commerce at Birmingham, Ala.

Arthur M. Field has resigned the secretaryship of the Winchester, Va., Chamber of Commerce, to enter into partnership with Charles C. Hopkins. They have established offices in Rochester, N. Y., as consulting engineers.

T. C. Fitz Gibbon has resigned the secretaryship of the Sharon, Pa., Chamber of Commerce, to become associated with the Pacific Coast office of the American City Bureau.

J. C. Fowler has resigned the secretaryship of the Chamber of Commerce at Pittsburg, Kans.

W. H. Gordon, of Chassell, Mich., has been elected secretary of the Commercial Club of Marquette, Mich.

M. D. Griffith has resigned the secretaryship of the Beaver Falls, Pa., Chamber of Commerce, to accept the secretaryship of the reorganized Chamber of Commerce at Elizabeth, N. J.

Frank T. Hill is the new secretary of the Commercial Club at Walker, Ia.

P. E. Hopper is the new secretary of the Chamber of Commerce at Elk City, Okla.

L. E. Iliff is the new secretary of the Richmond, Ind., Commercial Club.

W. H. Jones has been elected secretary of the Chamber of Commerce at Broken Bow, Ark.

F. A. Leffingwell has been elected manager of the Chamber of Commerce, Waco, Tex. Mr. Leffingwell was formerly assistant traffic commissioner of the Houston, Tex., Chamber of Commerce.

E. T. McBirney, of Newport, Ky., has been elected secretary of the Chamber of Commerce of Ashland, Ky.

George McGregor is the new secretary of the Guthrie, Okla., Chamber of Commerce.

Robert H. Manley has tendered his resignation as Commissioner of the Chamber of Commerce of Omaha, Nebr., to become associate general agent of the Northwestern Mutual Life Insurance Company, with headquarters at Omaha.

R. R. Marlin, ex-mayor of Dawson, Ga., has been elected secretary of the Chamber of Commerce of that city, to succeed W. B. Parks, resigned.

Meredith Meyers is the new secretary of the Chamber of Commerce of Lewistown, Pa.

J. E. North has resigned the secretaryship of the Springfield, Ohio, Chamber of Commerce, to accept a position as manager of Our Stores Co., at Springfield.

W. C. Pointer has been elected secretary of the Chamber of Commerce at DeWitt, Ark.

J. H. Rayburn has been elected secretary of the Commercial Club at Scott Bluff, Nebr.

George J. Roark, formerly assistant secretary of the Chamber of Commerce at San Antonio, Tex., has been elected general manager of the Chamber of Commerce at Beaumont, Tex., succeeding Garland S. Brickey.

Edward J. Samp, of Madison, Wis., has been elected secretary of the newly organized Chamber of Commerce at Niles, Ohio.

John G. Scherf has resigned the secretaryship of the Concordia, Kans., Chamber of Commerce to accept a similar position with the Chamber of Commerce at Andalusia, Ala.

Mandel Sener, of Hagerstown, Md., has been elected secretary of the Kenton, Ohio, Chamber of Commerce, succeeding George H. Cox.

D. B. Staley has been elected secretary of the Chamber of Commerce at Chambersburg, Pa.

H. Mayne Stanton is the new secretary of the Bemidji, Minn., Commercial Club.

Elmer B. Staudt is the new secretary of the Board of Trade at Pennsburg, Pa.

A. J. Stowe has resigned the secretaryship of the Pella, Ia., Commercial Club.

William A. Trowbridge has resigned the secretaryship of the Carthage, N. Y., Chamber of Commerce, to accept the secretaryship of the Chamber of Commerce at Mechanicsville, N. Y.

Clarence Walters, of Duncan, Okla., has been elected secretary of the Commercial Club at Yoakum, Tex.

W. T. Wheeler has resigned the secretaryship of the Young Men's Business League of Waco, Tex., to become organization director of the West Texas Chamber of Commerce.

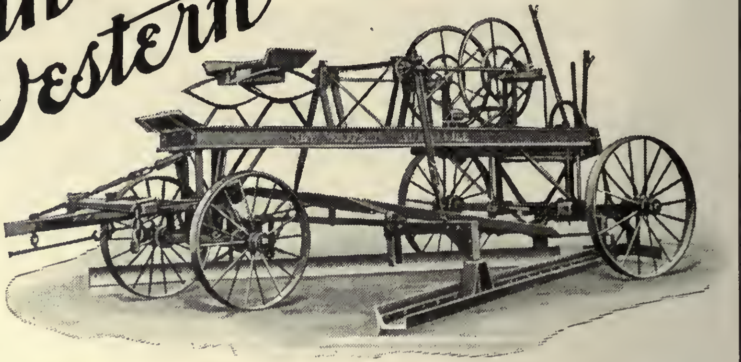
Captain Ray Whyte has been appointed secretary of the Danville, Ind., Chamber of Commerce.

P. L. Wills has resigned the secretaryship of the Chamber of Commerce at Danville, Ill., to become associated with the Pacific Coast office of the American City Bureau.

Carroll R. Woods, formerly secretary of the Shelbyville, Ind., Chamber of Commerce, and late with the United States Army, has been elected secretary of the Bluefield, W. Va., Chamber of Commerce.

C. G. Yoran has been elected secretary of the Commercial Club of Manchester, Ia.

Austin Western



NEW IMPROVEMENTS IN THE AUSTIN-WESTERN LINE

The Austin Western is recognized as the most complete line of road equipment on the market. The Austin Western leads the world in the development of improved machines and does not merely follow with imitations. It holds that position because it is always growing, and devising new or improving old methods as road builders demand them.

Here are two new Austin-Western methods:

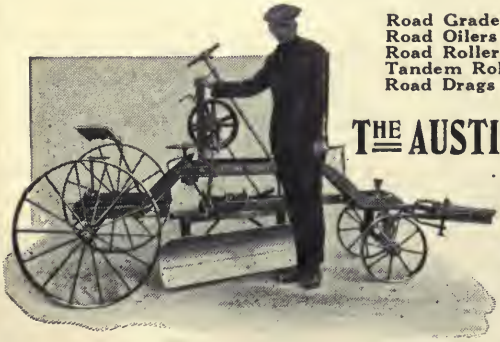
1. THE WESTERN ROAD PLANER ATTACHMENT

—a new and ingenious way of using an old grader or fitting up a new one. This attachment can be fitted to the Austin or Western grader or any other grader having a long rear axle. It is the most successful, yet simple, and thoroughly practical, road machine ever added to the grader line. It will plane and level rutted roads three or four times as fast as an ordinary grader blade works. In road dragging it does the work of six drags, six men and twelve horses. You can save hundreds of dollars with this new road machine. Send for folder giving full particulars.

2. THE WESTERN MIDGET—The maintenance man's "Mascot"

—has all the adjustments of a larger grader, and yet it is a genuine one-man, two-horse machine. It cleans out ditches, trims edges, fills ruts, etc. It positively levels a road surface because it has four wheels and an adjustable axle, which makes its work much superior to road drags or two wheel graders which merely follow and do not obliterate the waves and depressions of the road. It will do the light work just as well and save the extra team when using your big grader.

Send for full descriptive matter and our free trial proposition.



Road Graders
Road Oilers
Road Rollers
Tandem Rollers
Road Drags
Wheeled Scrapers
Elevating Tractors
Gyratory Crushers
Jaw Rock Crushers
Street Sprinklers
Street Sweepers
Road Scarifiers
Grading Plows

THE AUSTIN-WESTERN ROAD MACHINERY CO.

KARPEN BUILDING, CHICAGO

Branch Offices

New York City
San Francisco, Cal.
Jackson, Miss.
Boston, Mass.
Columbus, Ohio
Los Angeles, Cal.
Memphis, Tenn.
St. Paul, Minn.
Oklahoma City, Okla.
Dallas, Texas
Richmond, Va.
Portland, Ore.
Atlanta, Ga.

The City's Legal Rights and Duties

A Monthly Department of Information for City Attorneys and Other Municipal Officers, Summarizing Important Court Decisions and Legislation

Conducted by A. L. H. Street, Attorney at Law

Accounting by City Treasurer

When there is no statutory or charter requirement that a municipal treasurer or collector of taxes put city funds out at interest, he discharges his full duty to the municipality by accounting for all funds received by him, with any accumulation of interest thereon. Neither he nor his surety will be liable because he deposits funds in a bank without any agreement as to the rate of interest to be paid, or even makes non-interest-bearing deposits. (Massachusetts Supreme Judicial Court, City of Lowell vs. Stiles, 122 Northeastern Reporter, 412.)

Sewer Construction Contracts

A city's acceptance of a sewer constructed by a contractor, and payment of the contract price, did not preclude it from afterward enforcing a claim against him for damages for failing to do the work in accordance with the contract plans and specifications, as to defects in the construction not known to the city and not discoverable on an ordinary inspection. Under an agreement for performance of work in the best manner and use of best materials, in accordance with plans and specifications, a municipal engineer's approval of defective work does not release the contractor from liability for failing to follow the plans and specifications. And where a sewer construction contract specified that the engineer was without authority to accept or reject the work, the contractor had no right to assume that the engineer could permit any deviation from the terms of the contract in the manner of doing the work. When a sewer contractor has failed to do work according to the plans and specifications forming part of the contract, the city is entitled to judgment covering the reasonable cost of making the work conform to the contract. (Oregon Supreme Court, City of Seaside vs. Randles, 180 Pacific Reporter, 319.)

Power to Annex Territory

The fact that half of the area of a small but growing town may remain unimproved does not necessarily establish unreasonableness of a plan for the annexation of territory adjacent to the municipal boundaries. Where such a town is surrounded by the mills of lumber companies, the properties of which include the living quarters of employes, and where the people of the town and the officers and employes of the companies live and work in such relationship as to form a single community, it is reasonable that such adjacent properties be annexed to the town, for the purpose of subjecting the entire community to the same police and sanitary regulations. (Louisiana Supreme Court, Bowman-Hicks Lumber Co. vs. Town of Oakdale, 81 Southern Reporter, 367.)

Maintaining Public Baths

A city maintaining a bath-house for free use of the public is not liable for money lost from a bather's clothing hung by him on a hook, in the absence of proof of negligence on the part of the city's employes in charge of the place, and in the absence of proof of exercise of due care on the bather's own part. His knowingly leaving his clothing in an unlocked compartment, without any intimation to the attendant in charge that there were valuables in them, prevents him from enforcing a claim against the city. (New York Supreme Court, Walker vs. City of Buffalo, 175 New York Supplement, 274.)

Municipal Debt Limits

The provision of the Washington constitution limiting the amount of indebtedness that may be created by a city does not apply to the purchase of a street railroad or other public utility to be paid for by bonds payable from the revenues of the utility. (Washington Supreme Court, Twichell vs. City of Seattle, 179 Pacific Reporter, 127.)

BACKED BY WRITTEN GUARANTEE

OilPull

ADVANCE-RUMELY

Not How Cheap—But How Good

Advance-Rumely was a pioneer in the making of internal combustion engines and ten years' experience has proved many things. It has proved the correctness of the OilPull design, its ability to successfully burn cheap kerosene and its absolute dependability during years of continuous service.

Advance Rumely has refused to be influenced to build its product to meet a price. Instead, its policy has been to build the OilPull tractor to meet a definite need. Large production reduces the price to the minimum, consistent with high quality.

As a successful outfit for road work, the record of the OilPull best speaks for itself.

The OilPull tractor is built in four sizes—12-20, 16-30, 20-40 and 30-60 H. P.—oil cooled, guaranteed oil burning and fully warranted as to capacity.

Special catalog on request.

ADVANCE-RUMELY THRESHER CO., *Inc.*
La Porte, Indiana

ADVANCE-RUMELY

Telegraph Pole Taxes

A tax imposed by the city of Richmond of $2 on each telegraph pole maintained in the city by plaintiff is valid, being reasonably proportionate to compensation for use of the street and for expenses of inspection, altho necessitating contribution from interstate business. (United States Supreme Court, Postal Telegraph-Cable Co. vs. City of Richmond, 39 Supreme Court Reporter, 265.)

Vote Required to Authorize Bonds

Under a statute authorizing issuance of municipal bonds on the assent of two-thirds of all the voters of the city "voting at an election to be held for that purpose," bonds may be issued on affirmative vote of two-thirds of those voting on the proposition, altho less than two-thirds of all votes cast in the general election at which the proposition was submitted. (Missouri Supreme Court, State ex rel. Kansas City vs. Orear, 210 Southwestern Reporter, 392.)

Nature of Municipal Corporations

A municipal corporation is but a branch of the state government established to aid the legislature in providing for the welfare of the public within the territory for which the municipality is organized. (California District Court of Appeal, Akerman vs. Moody, 176 Pacific Reporter, 696.)

Abandoning Local Improvements

A municipal corporation has the lawful right to abandon a local improvement project, altho assessment rolls to cover the cost have been made and spread. (Illinois Supreme Court, Gray vs. City of Joliet, 122 Northeastern Reporter, 550.)

Licensing Business Locations

The ordinances of the city of High Point, N. C., vest in the City Manager power to license locations for meat markets, with provision for referring applications to the City Council in cases of doubt. It is held by the Supreme Court of the state, in the case of McIntyre vs. Murphy, 98 Southeastern Reporter, 820, that refusal of the municipal authorities to grant a license to conduct a market at a certain place, on the ground that the market would constitute a nuisance in the locality, will not be interfered with by the courts in the absence of proof that the refusal was arbitrary and unreasonable.

Validity of Billboard Regulations

An ordinance of the city of St. Louis is valid in its provisions limiting the area of billboards to 400 square feet, and their height to 14 feet above the ground; requiring a space of 4 feet between the bottom and the ground, and forbidding construction nearer than 6 feet to a building or the side of a lot, or within 2 feet of each other, or within 15 feet of the street line. If the main provisions of a billboard regulation bear proper relation to the public safety, it will not be held to be invalid because in some of its minor aspects it deals with uniform building lines, or other esthetic considerations. It is within the power of a city to discourage the construction of billboards by heavily taxing them. Restrictions imposed by ordinance are not to be invalidated because a billboard owner may have previously made advertising contracts which are rendered burdensome by such restrictions. (United States Supreme Court, St. Louis Poster Advertising Co. vs. City of St. Louis, 39 Supreme Court Reporter, 274.)

Ratifying Unauthorized Contracts

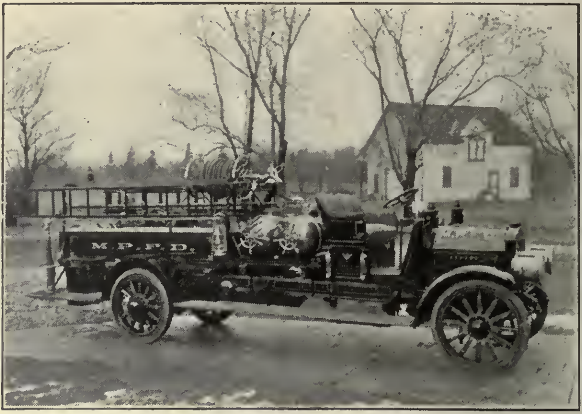
A municipal corporation is bound by a contract to purchase property made on its behalf by an unauthorized agent, where the transaction is within the scope of municipal affairs and the proper authorities signify a purpose to ratify the purchase. Hence, where water meters were sold and delivered to a city owning a water-supply system, upon an order given by the clerk of the city water board, and the city received the meters and paid for their installation, there was an implied ratification of the purchase, rendering the city liable for the agreed price. (West Virginia Supreme Court of Appeals, Union Water Meter Co. vs. Town of New Martinsville, 98 Southeastern Reporter, 516.)

Assessments Against County Property

Under the laws of Colorado a city is entitled to levy special improvement assessments against property owned by the county in which the city is situated, and can enforce the same by bringing suit against the county to collect the amount due. (Colorado Supreme Court, Board of Commissioners of El Paso County vs. City of Colorado Springs, 180 Pacific Reporter, 301.)

Another **FEDERAL**

"Shorten the miles to market—build better roads."



Combination chemical and hose cart recently purchased by the Midland Fire Dept., Paterson, N. J.

Federal-ized Fire Fighting in Paterson, N. J.

Guardians of human life and public property, municipal fire departments carry a burden of responsibility second to no other branch of civic government.

In the stern business of fire fighting, nothing but the most efficient and reliable of equipment can be tolerated.

For this reason, *good* motor trucks are replacing horse equipment universally.

And among the comparatively few makes of trucks so chosen, the growing number of Federals is significant of Federal dependability, speed, and ability to give year-round satisfaction.

"Traffic News," an interesting motor truck magazine, will be mailed on request.

FEDERAL MOTOR TRUCK COMPANY
34 FEDERAL STREET DETROIT, MICH

FEDERAL

One to Five Ton Capacities

Constitutional Debt Limit

Under provisions of the Kentucky constitution, limiting the power of certain cities to incur indebtedness to three per cent of the aggregate value of the taxable property of the city, excepting as the public health or safety may create an emergency requiring the limit to be exceeded, it is held by the Kentucky Court of Appeals that, altho an emergency might arise for the acquisition of a water system, the city would not be justified in exceeding the debt limit for the purpose of acquiring a joint water system and electric light plant. (Samuels vs. City of Clinton, 211 Southwestern Reporter, 567.) Speaking of the object intended to be accomplished by the constitutional limitation, the Court remarks that the provisions "were intended by the people to protect themselves against themselves, when they should act under sudden impulse, or from expectations growing out of mistaken optimism, as to advantage and ability to pay, and thus burden themselves with public debts, for which they would receive in the end no fair consideration, and beyond the reasonable ability of municipalities to pay, and to protect the minority against the excessive optimism of the majority, but it was not intended by the section to deprive the municipality of all remedy necessary to preserve its health and safety, when an unexpected and hard-pressing necessity makes such remedy necessary."

But, applying the limitation to electric light plants proposed to be acquired by small municipalities, the Court adds:

> "While an electric light plant and a system of electric lights is a great convenience and a most delightful and desirable luxury to the inhabitants of a municipality of the fifth class, the necessity of having one for safeguarding the public health or public safety is not so great as to create an emergency which would authorize the municipality to create an indebtedness beyond the 3 per cent fixed by section 158 of the constitution."

On the Calendar of Conventions

August 12-14.—Kingston, Ont.
Union of Canadian Municipalities. Annual convention. Secretary, W. D. Lighthall, Montreal Trust Building, Montreal, Que.

August 12-14.—West Allis, Wis.
League of Wisconsin Municipalities. Annual convention. Secretary, Ford H. MacGregor, Madison, Wis.

August 19-29.—Chautauqua, N. Y.
Open Forum National Council. A Summer School of Open Forum Methods. Secretary, Harold Marshall, 359 Boylston Street, Boston, Mass.

August 26-28.—Hartford, Conn.
American Association of Park Superintendents. President, J. F. Foster, South Park System, Chicago, Ill.

August 26-28.—Allentown, Pa.
League of Cities of the Third Class in Pennsylvania. Annual convention. Secretary, Fred H. Gates, City Clerk, Wilkes-Barre, Pa.

August 26-28.—Toronto, Ont.
Ontario Municipal Association. Annual meeting. Secretary, B. H. Spence, 705 Lumsden Building, Toronto, Ont.

August 26-29.—Toronto, Ont.
Fire Marshals' Association of North America. Annual convention. Secretary, John G. Gamber, Springfield, Ill.

August 27-29.—Yarmouth, N. S.
Union of Nova Scotia Municipalities. Annual convention. Secretary, Arthur Roberts, Town Solicitor, Bridgewater, N. S.

August 28-29.—Madison, Wis.
Centralized Buying Conference, for representatives of state and federal purchasing departments. First national conference. Address M. F. Blumenfeld, Superintendent of Public Property, State House, Madison, Wis.

September 17-19.—Muscatine, Iowa.
League of Iowa Municipalities. Annual convention. Secretary, Frank G. Pierce, Marshalltown, Iowa.

September 23-24.—Danville, Va.
League of Virginia Municipalities. Annual convention. Secretary, L. C. Brinson, Portsmouth, Va.

September 23-26.—Chicago, Ill.
International Association of Municipal Electricians. Annual convention. Secretary, Clarence R. George, Houston, Tex.

September 29—October 2.—Cleveland, Ohio.
National Safety Council. Eighth Annual Safety Congress. Secretary, S. J. Williams, 208 La-Salle Street, Chicago, Ill.

September 30—October 3.—Albany, N. Y.
New England Water Works Association. Annual convention. Secretary, Willard Kent, Narragansett Pier, R. I.

October 2-5.—Urbana, Ill.
Better Community Conference. Held under the auspices of the University of Illinois. Address R. E. Hieronymus, Community Adviser, Urbana, Ill.

October 8-10.—Atchison, Kans.
League of Kansas Municipalities. Annual convention. Secretary, Albert A. Long, University of Kansas, Lawrence, Kans.

October 27-29.—Indianapolis, Ind.
National Association of Commercial Organization Secretaries. Annual convention. Secretary, Willis Evans, Association of Commerce, Peoria, Ill.

October 27-30.—New Orleans, La.
American Public Health Association. Annual meeting. Secretary, A. W. Hedrich, 169 Massachusetts Avenue, Boston, Mass.

October 29-31.—Philadelphia, Pa.
American Civic Association. Annual convention. Secretary, E. E. Marshall, Union Trust Building, Washington, D. C.

November 12-14.—New Orleans, La.
American Society of Municipal Improvements. Annual convention. Secretary, Charles Carroll Brown, 304 East Walnut Street, Bloomington, Ill.

Shale that Machine Cut at 3 Ft. Per Minute

Waterworks Men!

Look to your costs in these days of high prices and wages. The P & H Excavator purchased by the Erie, Pa., Water Dept. (by whom the record shown here was made) returned half its cost on four miles of mains.

P & H Equipment covers every phase of the job from the opening of the trench to getting the backfill back quickly and compactly. Send for general catalog.

PAWLING & HARNISCHFEGER CO.
MILWAUKEE, WISCONSIN

660 Ft. In 3 Hours

During 1915, considered an ordinary year, the city laid 25,000 ft. of 6- and 12-in. mains in hand excavated trenches at a labor cost for digging, laying and back-filling of 28.8c. a foot for the smaller and 36.08c. a foot for the larger size. Much more pipe was laid in 1916 and this year because of the rapid growth of the city. While complete unit costs for the last year's work have not yet been compiled, it is known that rising wages caused considerable increase over those of 1915. Records for 10,000 ft. of 6-in. main laid at one time last year show a total labor cost of 37.1c. per foot, of which digging alone represented 19c. with common labor 27½c. an hour. The trench was in clay, with shale at the bottom. As compared with this, the first performance with the trenching machine, excavating for 1620 ft. of line, was accomplished at a fuel and labor cost of $132.84, or 8.2c. per foot for actual digging. This was in gravel which required sheeting, the cost of which is included in the above figure. On another occasion, in digging through cut-over land, where many large but partly rotted stumps were cut through, 682 ft. of trench was dug in four hours, at a cost of $7.55 for three men and 15 gal. of gasoline—only 1.1c. per foot. On Oct. 5 the machine made its speed record of 660 ft. in three hours, but $3.02 for gasoline and $1.88 for the wages of the engineer and helper being charged to the operation. This was about ¾ of a cent per foot. Both trenches were in shale at the bottom.

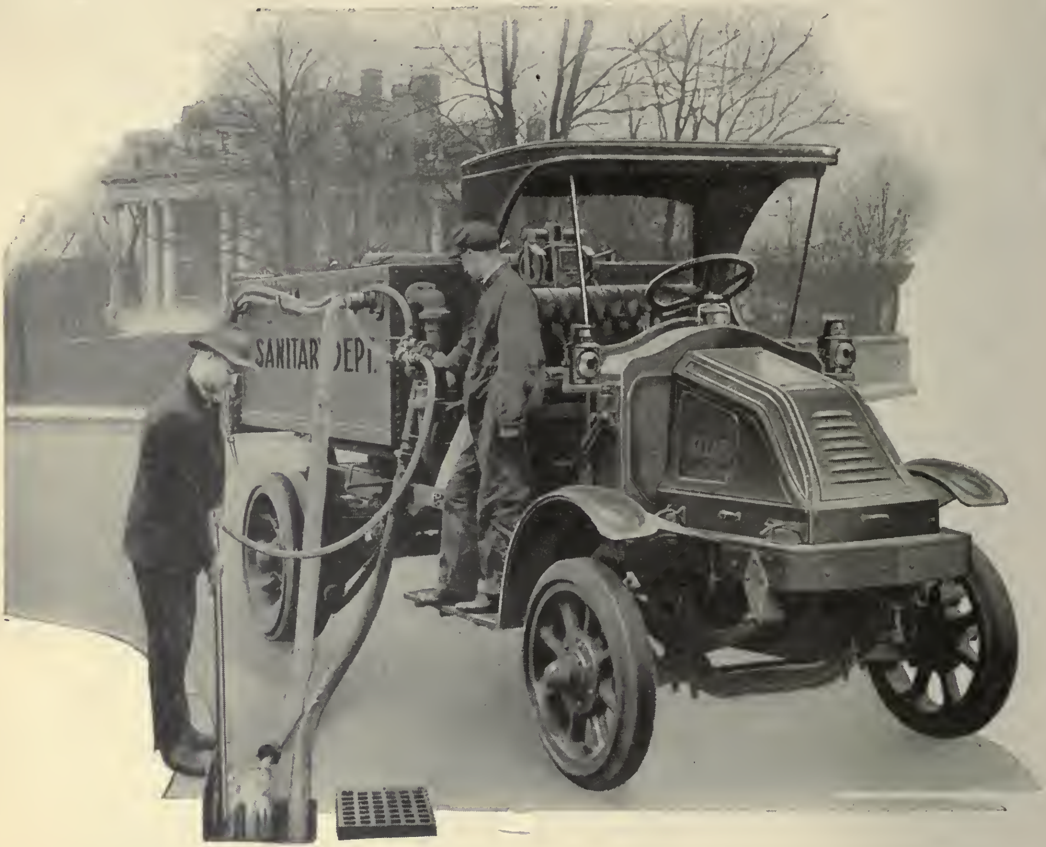
P&H excavators, back-fillers, tampers.

Complete List of City Manager Cities

Arranged Alphabetically According to States

THE following list of city managers in the United States is believed to be complete and accurate at the date of compilation, July 30, 1919, but the editors of THE AMERICAN CITY will appreciate having their attention called to any errors or omissions. The letters following the names of cities indicate type of manager form: C, an approved city manager charter; C—, a modified city manager charter; O, an ordinance-created manager plan.

Arizona		
Phœnix	C	V. A. Thompson
Arkansas		
Bentonville	O	Edgar Masoner
Hot Springs	C	George R. Belding
Monticello		H. T. Slemons
California		
Alameda	C	Charles E. Hewes
Alhambra	C—	Frank L. Hilton
Bakersfield	C	Mr. Harris
Glendale	O	T. W. Watson
Redding	O	E. A. Rolinson
San Anselmo	O	C. A. Macomber
San Diego	C—	
San José	C	Dr. Willard C. Bailey
Santa Barbara	C	Robert A. Craig
Colorado		
Boulder	C	W. D. Salter (acting)
Durango	C	A. F. Hood
Montrose	C	Cassius C. Smith
Florida		
Gary	C	J. A. O'Berry
Largo	O	W. H. Turner
Ocala	C	R. M. Martin
St. Augustine	C	Eugene Masters
Georgia		
Cartersville	C	Abram Cook
Griffin	C	E. P. Bridges
Rome	C	Sam S. King
Illinois		
Glencoe	O	H. H. Sherer
Wilmette	O	C. C. Schultz
Winnetka	O	H. L. Woolhiser
Iowa		
Anamosa	O	W. F. Hathaway
Clarinda	O	Henry Traxler
Estherville	O	F. G. Connelly
Iowa Falls	O	J. O. Gregg
Manchester	O	Thomas Wilson
Mt. Pleasant	O	T. W. McMillan
Villisca	O	W. J. Oviatt
Webster City	C	G. J. Long
Kansas		
El Dorado	C	Bert C. Wells
Hays	C	James C. Manning
Hudson	C	A. B. Hungerford
McCracken	C	Leonard L. Ryan
Wichita	C	Louis R. Ash
Kentucky		
Cynthiana	O	J. J. Curle
Maine		
Auburn	C	E. A. Beck
Massachusetts		
Norwood	C—	Wm. P. Hammersley
Waltham	C	Clarence A. Bingham
Michigan		
Albion	C	Walter E. Baumgardner
Alpena	C	Charles T. Park
Big Rapids	C	Dan H. Vincent
Birmingham	C	M. Lowman
Cadillac	C	George Johnston
Crystal Falls	C	J. H. Sanders
Eaton Rapids	O	O. S. Yager
Grand Haven	C—	I. R. Ellison
Grand Rapids	C	Fred H. Locke
Grosse Pointe Shores	O	Homer N. Kennedy
Jackson	C	A. W. D. Hall
Kalamazoo	C	Harry H. Freeman
Lapeer	C	Ray S. Blinn
Manistee	C	P. H. Beauvais
Otsego	C	Gerard A. Abbott
Petoskey	C	James E. Niles
Portland	C	F. L. Jenkins
Royal Oak	C	George E. Weitzel
St. Johns	C—	A. D. Smith
Sault Ste. Marie	C	Wilder M. Rich
Three Rivers	C	O. O. Johnson
Minnesota		
Anoka	O	Henry Lee
Morris	C—	Frank J. Haight
Pipestone	O	F. E. Cogswell
Montana		
Columbus	O	Fred Fahrion
Glasgow	O	Harvey Booth
New Mexico		
Albuquerque	C	A. R. Hebenstreit
Roswell	O	Arthur G. Jaffa
New York		
Newburgh	C	James Miller
Niagara Falls	C	Edwin J. Fort
Sherrill	C	Chester A. Brown
North Carolina		
Elizabeth City	C	F. W. Simonds
Gastonia	C	
Goldsboro	C	I. M. Cashell
Hickory	C	I. W. Ballew
High Point	C—	R. L. Pickett
Kinston	O	Wm. B. Coleman
Morehead City	O	W. B. Allred
Morgantown	C	W. R. Patton
Tarboro	O	J. H. Jacocks
Thomasville	C—	Ira Johnson
North Dakota		
Carrington	O	F. J. Beier
Ohio		
Ashtabula	C	M. H. Turner
Dayton	C	James E. Barlow
E. Cleveland	C	C. M. Osborn
Gallipolis	C	Edward E. Meyers
Sandusky	C	George M. Zimmerman
So. Charleston	C	P. H. Cheney
Springfield	C	O. E. Carr
Westerville	C	Ralph W. Orebaugh
Xenia	C	Kenyon Riddle
Oklahoma		
Collinsville	C	F. A. Wright
Madill	C	A. P. Marsh
Mangum	C	R. B. Snell
Weatherford	C	G. H. Critchfield
Oregon		
La Grande	C	John Collier
Pennsylvania		
Altoona	O	H. Gordon Hinkle
Ambridge	O	R. H. Hunter
Bethlehem	O	Winton L. Miller
Edgeworth	O	Wilbur M. Cotton
Mifflinburg	O	Wm. D. Kochersperger
Philipsburg	O	Roy Wilkinson
Sewickley	O	Wilbur M. Cotton
Towanda	O	W. T. Howie
South Carolina		
Beaufort	C	Hal R. Pollitzer
Rock Hill	C	J. G. Barnwell
Sumter	C	E. S. Shuler
South Dakota		
Clark	O	J. E. Smith
Tennessee		
Kingsport	C	William R. Pouder
Texas		
Amarillo	C	Jeff D. Bartlett
Brownsville	C	William E. Anderson
Brownwood	C—	E. R. Brashear



HOW are you cleaning your catch basins and sewers? In the old slow, expensive and disease-breeding way, with piles of filth on your streets? Or the "SECO" way?

The "SECO" Portable Pumping Apparatus cleans sewers and catch basins at a saving of 50 to 90% over the old way.

This apparatus is mounted on a special

KELLY-SPRINGFIELD CHASSIS

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THE SPRINGFIELD ENGINEERING COMPANY

SPRINGFIELD **Bushnell Building** **OHIO**

Bryan	C	J. W. Greer
Denton	C	H. V. Hennan
Eastland	O	Walter Lander
Electra	O	W. H. Larson
Lubbock	C	Martin S. Ruby
Lufkin	C	L. Mitchell
Ranger	C	M. A. Turner
San Angelo	C	E. L. Wells, Jr.
Sherman	C	O. J. S. Ellingson
Stamford	C	Edgar A. Burrow
Taylor	C	A. V. Hyde
Teague	O	E. B. St. Clair
Terrell	C	E. D. Kelly
Tyler	C	Henry J. Graeser
Yoakum	C	Vacant
Utah		
Brigham City	O	Charles O. Roskelley
Virginia		
Blackstone	O	R. B. Stone
Charlottesville	O	Shelton S. Fife
Farmville	O	Leslie Fogus
Fredericksburg	O	L. J. Houston, Jr.
Norfolk	C	Charles E. Ashburner
Portsmouth	C	W. B. Bates
Roanoke	C	William P. Hunter
Staunton	O	S. D. Holsinger
Winchester	O	Thomas J. Trier
West Virginia		
Charleston	C—	Bonner Hill
Wheeling	C	Charles O. Ephlin

City manager government has been adopted in the following cities, taking effect after July 30, 1919:

		Effective
California		
Fresno	C	Operation postponed
Salinas	C	
New York		
Auburn	C	January 1, 1920
Watertown	C	January 1, 1920
Ohio		
Akron	C	January 1, 1920
Oklahoma		
McAlester	C	1920
Tennessee		
Alcoa	C	July, 1919
Virginia		
Bristol	C	Sept., 1919
Petersburg	C	June, 1920
Suffolk	C	Sept., 1920

Municipal and Civic Publications

See also Department of News and Ideas for Commercial and Civic Organizations

Pool, Billiards and Bowling Alleys as a Phase of Commercialized Amusements in Toledo, Ohio.

REV. JOHN J. PHELAN, M. A. Little Book Press, Toledo, Ohio. Social Services Series 1, March, 1919. 195 pp. $1.50

The author here presents a considerable amount of specific, concrete information as the result of his extensive survey of the pool-rooms and bowling-alleys of Toledo and their effects upon boys and young men. A new ordinance for the control of pool-rooms is outlined, and a number of constructive measures are suggested for the improvement of the social life of Toledo. Students of social problems will find the volume helpful as a study in methods of collecting social data. For the benefit of such students the author has provided a series of thought-provoking exercises at the end of each section.

Business Law.

THOMAS CONYNGTON, with the collaboration of ELIZABETH A. SMART. The Ronald Press Company, New York. 1919. Third Printing. xxi + 535 pp. $4.00

Town Planning Institute, Papers and Discussions.

Vol. iv, 1917-18.

This always interesting volume of the proceedings of the British town planners contains five valuable papers and discussions: Town Planning in Canada, by Thomas Adams: The Regional Survey Preparatory to Town Planning, by Prof. Fleure; The Development of British Watering Places After the War, by J. W. Cockrill; Reconstruction With Particular Reference to Housing, by Lieut. R. L. Reiss; Arterial Roads in the Birmingham Town Planning Schemes, by Henry Edward Stilgoe. (Apply to Alfred R. Potter, Secretary, Town Planning Institute, 4 Arundel Street, Strand, London, W. C.)

City Budget Facts.

Issued, 1919, by the Bureau of Municipal Research, 813-820 Bank of Hamilton Building, Toronto, Ont. 30 pp., illustrated by charts.

Chemical and Biological Survey of the Waters of Illinois.

Bulletin No. 15, issued by the State Water Survey Division of the Department of Registration and Education, State of Illinois, and submitted on February 11, 1919, contains abstracts of detailed investigations made during 1917, arranged alphabetically by towns; articles entitled "Significance of Lactose-Fermenting Organisms in Water" and "Air Diffusion in the Activated-Sludge Process of Sewage Treatment"; and the results of an experimental study by D. F. McFarland of the extraction of grease from dried activated sludge. 133 pp., including index. (Write to Edward Bartow, Chief, Division of State Water Survey, Urbana, Ill.)

Boiler Water Treatment.

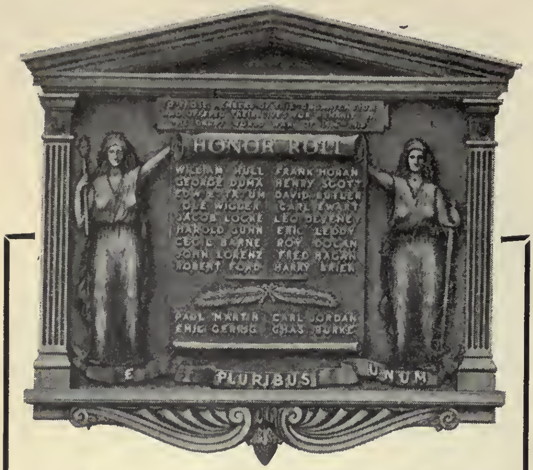
This bulletin shows clearly how a notable reduction in factory heat losses may be effected thru the substitution of softened for hard boiler water and sets forth the advantages and disadvantages of various processes for softening the water. 8 pp. 1919. (Write the Bureau of Mines, Department of the Interior, Washington, D. C., for Technical Paper 218.)

A Memorial University.

One of the most inspiring articles on the subject of soldiers' memorials that have come to our notice is entitled "A University for the Kansas City Memorial to Our Soldiers," and is the reprint of an address recently given by William B. Henderson. Opposing a suggestion that one feature of the Kansas City memorial be forty-eight pillars, "the pillars of the Republic," built so strong as to be still standing when our Republic has crumbled to pieces, the author says, "I would rather build the Republic so that when all the pyramids, triumphal arches, monuments and towers on earth have crumbled to dust, the Republic will have endured, and continue to be an agency of service and an inspiration to the world." What memorial could possibly better serve this high purpose than a great university dedicated to the task of building a great and noble people? 19 pp. 1919. (Apply to William B. Henderson, Kansas City, Mo.)

Proposed Tax Increases for Chicago.

A statement of the present financial condition of the Chicago city government and of the proposed increases in tax rates for the city's general corporate purposes, for education and for general corporate purposes in Cook County, prepared by the Chicago Bureau of Public Efficiency, 315 Plymouth Court. 17 pp. Issued June, 1919.



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in your college, church, club or community and we will give you a beautiful

Honor Roll or Bronze Memorial Tablet
recording permanently the names of the boys who fought for the Liberty of the World. Our plan gives full details. Write today for plan and design selection No. 29.

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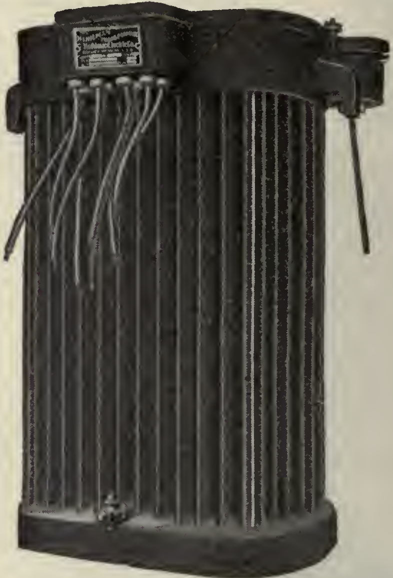

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MINIMUM UPKEEP

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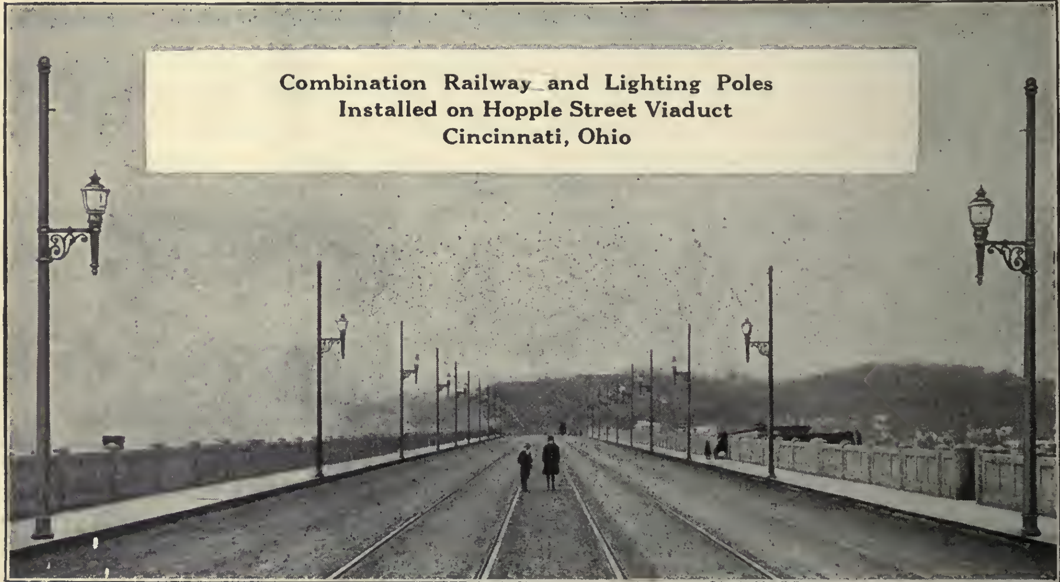

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NO LAMP STANDARDS REQUIRED.

Write for Illustrated Book on Modern Street Lighting.

ELECTRIC RAILWAY EQUIPMENT COMPANY
New York CINCINNATI, OHIO 30 Church St.

The Public Markets in the State of Washington.

This study of the experiences of a number of cities in the state of Washington should prove of value to other cities which contemplate installing municipal markets, as the investigator has succeeded in giving in his report a very clear exposition of both the limitations and the advantages of public markets, and is well prepared to give expert advice based upon his thoro study of this timely subject. 43 pp. (Published in October, 1918, by the Office of Farm Markets, Pullman, Wash.)

A Survey of the Poor and Alms Department and Almshouse of Newark, N. J.

At the behest of the Mayor and Board of Commissioners of Newark, N. J., a survey of the Newark Poor and Alms Department, of other social agencies in their relationships to the Department, and of the Almshouse, has recently been completed by the Russell Sage Foundation, thru its Department of Surveys and Exhibits. A very limited number of copies of this report are available for distribution. 71 pp. (Issued April, 1919, by the Department of Surveys and Exhibits, Russell Sage Foundation, 130 East 22d Street, New York City.)

Junk Dealing and Juvenile Delinquency.

A 60-page pamphlet issued by the Juvenile Protective Association of Chicago gives the results of its investigations into the relationship existing between junk dealing and juvenile delinquency. The report includes local reports, a summary of reports from other cities, a study of one hundred delinquent boys, the results of first-hand observations of junk dealers, and a number of recommendations. 1919. Price, 25 cents. (Copies can be obtained from the Juvenile Protective Association, 816 South Halsted Street, Chicago, Ill.)

Robert W. Speer—A City Builder.

This memorial book tells the story of the life and work of Robert W. Speer, three times mayor of Denver, who died in May, 1918. The story of his lifetime of service for the betterment of his city and state is illustrated by a number of large photographs, some of them in color, showing many concrete results of his service as expressed in public works of beauty and utility. 1919. Quarto. Bound in leather. 79 pages. 42 illustrations. Price, $3.00. (Send request for copy of this book to E. C. MacMechen, Editor, Room 110, City Hall, Denver, Colo.)

A Tentative Program for Community Centers.

The Committee on Community Centers of the Chicago Board of Education has issued a 12-page pamphlet outlining a plan for school extension work to include Americanization, educational exhibits, films and lantern slides, community music, speakers' bureaus, and a more effective combination of evening school and community center activities. The Committee's report also discusses the advisability of hiring extra paid workers for this service and of coördinating existing organizations with the schoolhouse as their common home. Issued January, 1919. (Apply to Edward L. Burchard, Acting Secretary of the Advisory Commission on Community Centers, Board of Education, Chicago, Ill.)

A Manual for Home Teachers.

A pamphlet relating the experiences of "pioneer" home teachers in California and containing plans and instructions for prospective home teachers in matters pertaining to instruction in sanitation, the English language, household duties, the rights and duties of citizenship; to the furtherance of better school attendance in both day and night schools, home gardens and home preserving of fruits and vegetables; and to all other phases of home service. 1919. 48 pp. Issued by the State Commission of Immigration and Housing of California. (Apply to Paul Scharrenberg, Secretary, Underwood Building, 525 Market Street, San Francisco, Cal.)

First Aid to New Voters.

Prepared in 1918 by Louise Burchard to meet the needs of the newly enfranchised women voters of New York State. The topics treated are: citizenship; the town, village, city, county, state and national governments; treatment of criminals; suffrage and elections; methods of law-making; taxation; the school system; "Citizens of the World"; the territories; and city problems. 63 pp. (Apply to Louise Burchard, Schenectady High School, Schenectady, N. Y.)

A Garden of American Motion Pictures.

A list selected and offered by The National Committee for Better Films, issued April, 1919. 24 pp. Price, 25 cents. (Procurable from the Social Service Department of The National Board of Review of Motion Pictures, 70 Fifth Avenue, New York.)

A School Building Program for Cities.

Dr. N. L. Engelhardt, the author of this practical volume, emphasizes the necessity and the ultimate economy of planning school building programs which will meet the needs of the community in the future as well as in the present. The development of such a program is considered as involving three distinct problems: the measurement of the population, the measurement of the school plant, and the measurement of the ability of the community to pay for needed extensions to its school plant. As the writer's discussion of each of these problems is based on his recent participation in six extensive school surveys, his conclusions should be of much practical value to all who are facing the task of laying out a school building program. 130 pp. 1918. (Published by Teachers College, Columbia University, New York City.)

The Book of New Orleans and the Industrial South.

That the city of New Orleans is wide-awake and progressive is evidenced by this book which has been issued by the city government in its campaign to advertise New Orlean's industrial facilities. Some of the city's advantages for trade and home-building which are described and attractively illustrated in this volume are its strategic location, its port facilities, the new inner harbor or industrial canal, the natural resources of the near-by territory, the financial resources and banks of New Orleans, its big ship-building industry, adequate and low-priced housing facilities, enterprising commercial organizations, healthful climate, schools, churches, clubs and facilities for recreation. 64 pp. Quarto. 1919.

Waste Reclamation.

"Don't Waste—Save It" is the slogan adopted by the Waste-Reclamation Service, Department of Commerce, Washington, D. C., in its recently issued bulletin describing its work. The booklet tells how to organize a local waste-reclamation council, what the duties of such a council are and what coöperation it may receive from the national Service, and emphasizes the necessity and value of this work. 20 pp. 1919.

Disposal of Waste Paper in Government Service.

Letter from the Secretary of Commerce to the House of Representatives transmitting report on the handling and disposal of waste paper in government service, together with certain comments thereon from the office of the public printer and the reply of the Department of Commerce. 20 pp. 1919. (Apply to H. L. Baldensperger, Chief, Waste Reclamation Service, Department of Commerce, Washington, D. C.)

Modern Industrial Housing.

The writer states that he "has herein undertaken to set forth clearly and concisely the salient problems confronting industrial employers, housing corporations and communities, with the idea of assisting those who contemplate the erection of industrial houses in arriving at a practical method of procedure." Photographs and architects' plans show some interesting and attractive developments at Marcus Hook and South Langhorne, Pa. Part II of the pamphlet is devoted to a description, with illustrative drawings, of the concrete stud and cement stucco house, which is especially recommended by the author as a solution of the workingman's house problem. 24 pp. 1918. (Published by Ballinger & Perrot, Architects and Engineers, Wesley Building, Philadelphia, Pa.)

Aliens' Text Book on Citizenship.

Herbert M. Beck, Chief of Naturalization, Camden County Courts, Camden, N. J., has prepared an attractive little book of 100 pages which provides the alien with the knowledge necessary to pass the examinations for naturalization. The book includes a brief but inspiring introduction by Mr. Beck, the United States laws relating to naturalization expressed in simple, easily understood language, the Declaration of Independence, the Constitution, the two national anthems, and a list of questions and answers which have been found helpful during many years' experience in naturalization work. 1919. (Apply for copies to Mr. Beck, address above.)

Report on the Problem of Refuse Collection in Rochester, N. Y.

In this report are presented the results of a detailed analysis of the methods of refuse collection at present employed in Rochester, together with comments on these methods and suggestions for organizing for a better and more economical service. 103 pp., and a large number of photographs and tables, maps and diagrams. (Issued March, 1919, by the Rochester Bureau of Municipal Research, Inc.)

Reduce Lamp Renewals By Close Current Regulation

Westinghouse
Ventilated-Coil Type, Series Mazda
Regulators

give such accurate regulation that the lamp filament is afforded ample protection at all times against excessive current and surges on the series circuit. This protection means increased lamp life and lower operating costs.

Westinghouse Type CF Luxsolite Fixtures are designed for use with the highly efficient gas-filled Mazda Lamp. They are attractive and durable. With the various types of diffusing and refracting glassware, they satisfy the most exacting requirements of efficient Street Lighting.

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Lessons from Housing Developments of the U. S. Housing Corporation.

"Two sorts of lessons are to be derived from the Government's emergency operations in the housing field," says Frederick Law Olmsted, Manager of the Town Planning Division of the U. S. Housing Corporation, in this article, which has been reprinted from the *Monthly Labor Review*. Mr. Olmsted proceeds to show the benefits to be gained by the individual home builder in the study of the successes and mistakes made in these large-scale hurried experiments, and shows also that there is a deeper lesson and problem involved in the study of the social and economic conditions which have caused and are still causing the housing shortage. May, 1919. 12 pp. (Apply to the U. S. Department of Labor, Washington, D. C.)

Reconstruction and Social Advance.

A new program of community service, as worked out in Chester, Pa. Reprinted from *The Survey* by Community Service, Inc., 1 Madison Ave., New York. Chester's activities included Americanization work, community singing, community centers in the schools, colored organization, Italian organization, community clubs and a training class for playleaders. 1919. 12 pp.

The Working Conditions Service of the U. S. Department of Labor.

A recently issued pamphlet entitled "Treatment of Industrial Problems by Constructive Methods" tells how the Service is prepared to attack these problems, thru information service, consulting service, standardization and research work. A glance at the chart which will be sent on request with the pamphlet will show the employer, superintendent, employment manager, personnel worker or any other interested in better working conditions and greater efficiency of workers just how the Working Conditions Service is prepared to help him in solving his individual problems. (Copies can be secured by writing to the Director General, Working Conditions Service, Department of Labor, Washington, D. C.)

Index to Bulletins of Highway Industries Association.

The Highway Industries Association, Washington, D. C., has recently issued a 4-page typewritten index of the bulletins issued by the Association up to June 1, 1919, and announces that a semi-annual index will hereafter be issued. Copies can be obtained upon application.

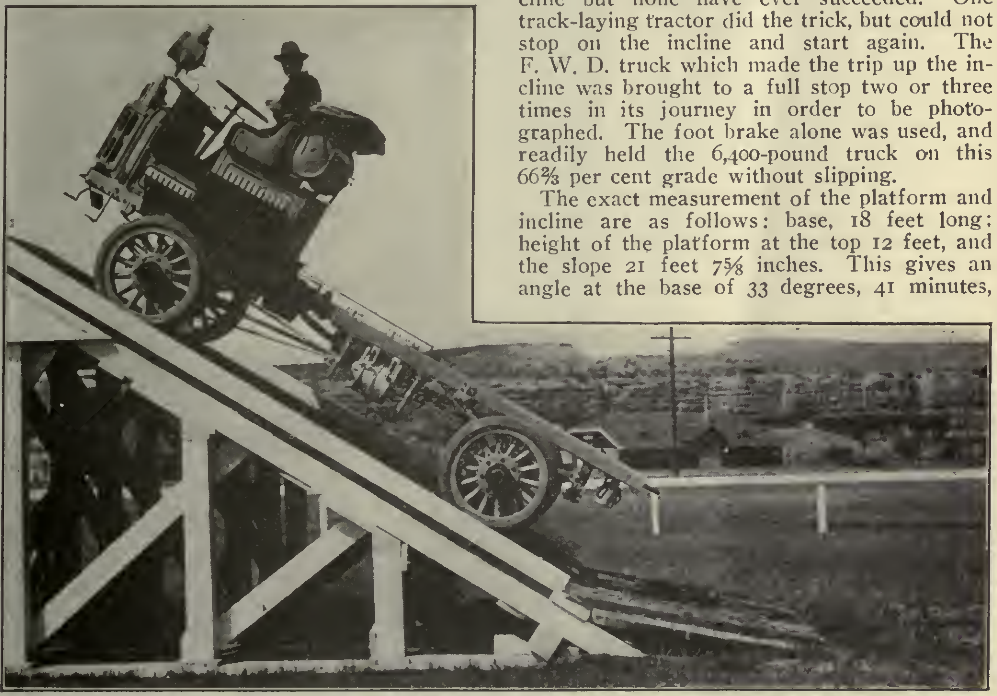
Methods, Materials and Appliances

News for Boards of Public Works, Engineers, Contractors, Purchasing Agents, and Others Interested in the Economical Construction and Efficient Operation of Public Improvement Undertakings

Climbing a 66^2/ Per Cent Grade

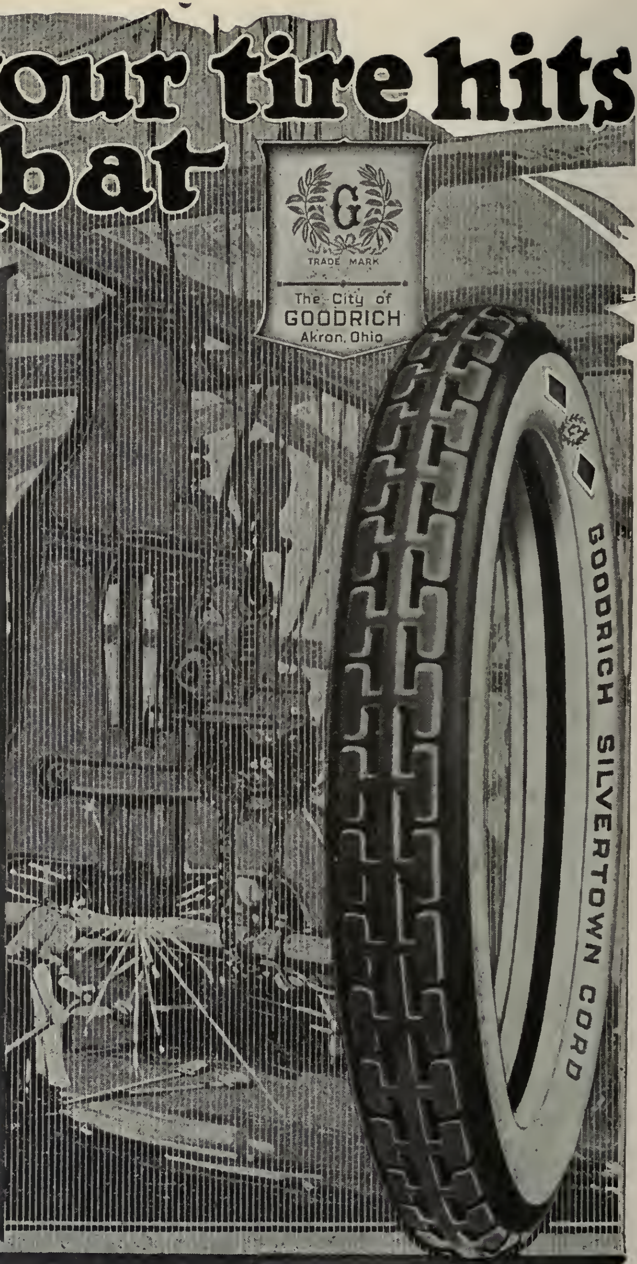
A remarkable demonstration of the pulling powers of an F. W. D. truck was given not long ago by H. A. Lewis, of Billings, Mont., when he drove one of these trucks up the famous Billings incline. Many rear wheel drive trucks have attempted to go up this incline but none have ever succeeded. One track-laying tractor did the trick, but could not stop on the incline and start again. The F. W. D. truck which made the trip up the incline was brought to a full stop two or three times in its journey in order to be photographed. The foot brake alone was used, and readily held the 6,400-pound truck on this 66⅔ per cent grade without slipping.

The exact measurement of the platform and incline are as follows: base, 18 feet long; height of the platform at the top 12 feet, and the slope 21 feet 7⅝ inches. This gives an angle at the base of 33 degrees, 41 minutes,



A 3½-TON TRUCK CLIMBING THE BILLINGS 66⅔ PER CENT GRADE

When your tire hits a brickbat



—as you are spinning along at a good speed, it gets a blow that would smash a steel bar.

How does a tire stand it? Because a pneumatic tire yields to the impact of the blow, absorbs it throughout its casing, and springs back to its original shape.

Obviously the tire that can absorb the greatest shock with the *least jolt* and *least damage* is the easiest riding and most durable tire.

The Silvertown Cord Tire has been proved by *actual hammer test* able to withstand double the blow that ordinary tires can before it shows injury.

The reason is Silvertown's specially wrapped cable-cord body, which absorbs extreme shock, distributing it along the full length of its thewlike cable cord, much as a coil spring takes up the smash of a blow.

Therefore, it is scientific logic that Silvertown's unique structure does meet the jolt and jar of rough travel with smoother riding ease, and lives to deliver greater mileage.

In the beginning know Silvertown by the *Twin-Red-Diamonds* on the sidewall; and you will remember them in the end by their perfect service.

Buy Goodrich Tires from a Dealer.

ADJUSTMENT

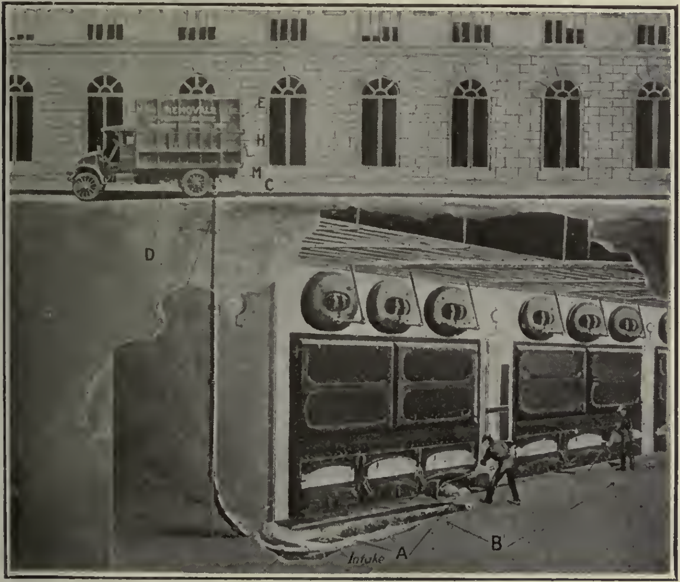
Fabrics 6,000 miles — Cords 8,000 miles

GOODRICH
TIRES
"BEST IN THE LONG RUN"

which, when translated into percentage of grade, gives 66⅔ per cent. The photograph on page 191 shows the truck brought to a full stop part way up the grade.

Motorized Pneumatic Ash Conveyors

Ash Removals, Inc., 347 Madison Ave., New York City, maintains a service which the company claims will remove 500-800 pounds of ash per minute from a boiler room and eliminate the cost and trouble of dust, noise, ash cans, elevators and elevator maintenance, and ash-removing labor. Included in the apparatus used are a concrete pit, with removable covers, into which the ashes are raked; an 8-inch conveyor line extending from beneath the concrete pit and terminating under the sidewalk at the curb; and a conveyor truck, consisting of a 6-ton chassis equipped with a high-pressure blower driven by truck motor, a washing device for eliminating all dust from the air before exhausting into the atmosphere, a silencer and a steel bin or separator placed above the machinery and forming the body of the truck. The system operates as follows: Ashes are raked from boilers into the concrete pit by the fireman. Upon the arrival of the conveyor truck, the operator makes the necessary connection to the conveyor line thru the sidewalk at the curb, and starts the machinery on the conveyor truck. The assistant operator enters the boiler room for the purpose of feeding the line. When all ashes have been removed, the operator disconnects the conveyor truck at curb and discharges the ashes from the bin on the conveyor truck by gravity thru gates into a dump truck. The dump truck then proceeds to the point of disposal, allowing the conveyor truck to go to the next building to repeat the process.



SECTIONAL VIEW SHOWING OPERATION OF ASH REMOVALS SYSTEM

Children Delight in the Giant Stride

One of the most popular pieces of apparatus in any public playground is the giant stride. This "merry-go-round" device is one of a great variety of types of playground equipment sold by the American-La France Fire Engine Company, Inc., of Elmira, N. Y. The model shown herewith will carry eight riders, is substantially made and practically indestructible. The pivot head is of malleable iron and can be furnished for either steel or wood post. The handles consist of three ladder rungs, of wood or steel. The steel post consists of 4-inch pipe 16 feet long, no threads. The company will send on request illustrated literature describing other pieces of playground apparatus that will delight the "kiddies," such as coaster slides, seesaws, horizontal ladders and swings, substantially made in many different designs and sizes.

A POPULAR PLAYGROUND SPORT

J. L. Ludlow Released from War Service

After two years' war service with the United States Shipping Board and United States Public Health Service, J. L. Ludlow has now resumed private practice as consulting engineer and general manager of The Ludlow Engineers, Winston-Salem, N. C., a well-known firm whose varied activities include: construction of water-works, electric light and power plants, high-

Drink Nature's Own Beverage!

There is nothing more refreshing when one is fatigued than a drink of PURE, COLD WATER.

Many municipalities have appreciated the importance of installing **Sanitary Drinking Fountains** in Public Buildings, Playgrounds and Parks. Any Drinking Fountain other than a SANITARY one is a menace to the Public Health.

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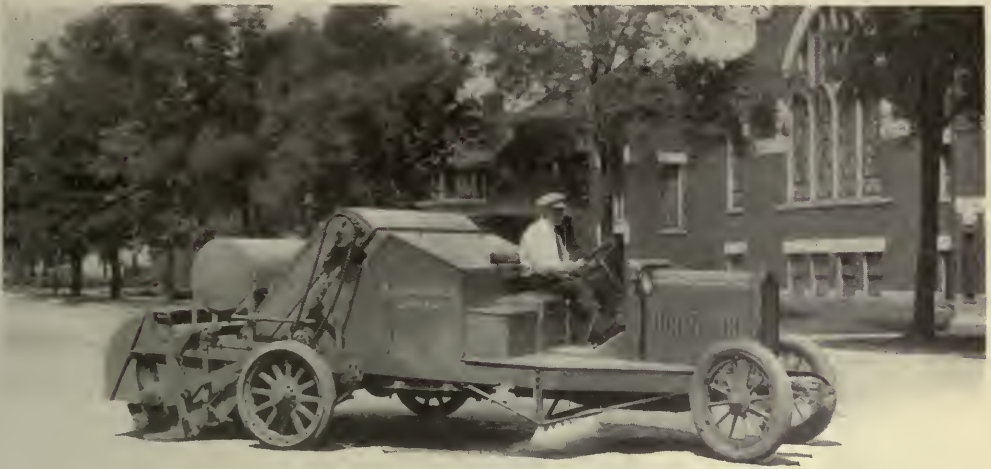
The PURO LIBERTY DRINKING FOUNTAIN

THE PURO LIBERTY IS ABSOLUTELY SAFE! The stream of water cannot possibly be contaminated. Lips or fingers cannot touch the jet, neither can any water fall back into the mouthpiece.

Safeguard the health in YOUR CITY by installing PURO LIBERTY DRINKING FOUNTAINS IN ALL PUBLIC PLACES.

Write us NOW for descriptive matter and prices.

Puro Sanitary Drinking Fountain Co.
Haydenville, Mass., U. S. A.



ONE MAN CAN OPERATE THIS SANITARY MOTOR-DRIVEN STREET SWEEPER

ways and concrete bridges, drainage systems, wharves and terminals; industrial and municipal sanitation, and industrial village and city planning.

Sanitary Motor Sweeper

An up-to-date, noiseless, sanitary motor sweeper that sprinkles, sweeps and collects the street dirt all in one operation is described in a recent booklet issued by the Austin Manufacturing Company of Chicago. The equipment includes a large water tank, capacity 150 gallons, and a spraying equipment sufficiently in front of the broom to give the water enough time to penetrate the dirt before sweeping. The Austin motor sweeper moistens the dirt, sweeps it upon a carrier, and conveys it to an ample receptacle without creating dust. When the receptacle is full, it carries the refuse to a dumping point. All this work is accomplished by one man, who needs no preliminary training other than driving a motor truck. It is claimed for this sweeper that it raises no dust, and so can be used to advantage in the daytime, and that it is so noiseless in action that it may be used in residence districts without the slightest disturbance, thus permitting 24-hour service.

A Municipal Exposition in the Grand Central Palace

With the signing of the Peace Treaty and the gradual adjustment of peace conditions to the world's big business, a new day has dawned for American industries, and one of the big factors in establishing a bigger world commerce for American industries is the Merchants and Manufacturers Exchange of New York. This new enterprise has taken over the Grand Central Palace for the purpose of turning it into a mammoth trade clearing-house. It will consist of eight or more permanent industrial expositions, one of which is to be the International Exposition of Municipal Equipment. It is planned to have this Exposition embrace all that is best and most up-to-date in equipment and utilities along every line of municipal activity. It is an initial opportunity to bring together manufacturer and buyer, and to put American municipal products before the world's buyers at a minimum overhead cost.

The Merchants and Manufacturers Exchange of New York is owned and controlled by the Nemours Trading Corporation, of which Alfred I. DuPont is President. This corporation has branches in all leading cities thruout the world, consisting of nineteen branch offices and 3,000 foreign selling agencies. Mr. DuPont, foreseeing the advantage to American business in making America the center of world commerce, conceived the idea of leasing Grand Central Palace as a great trade mart. The Merchants and Manufacturers Exchange will use eight to twelve floors for permanent industrial expositions, while the four lower floors will be used for short-term expositions of various sorts.

The assembling of the Municipal Exposition, which promises to be one of the most interesting in the Palace, will be in charge of Jeanne Carpenter as Director. Mrs. Carpenter, who is co-author of "Municipal Housecleaning," has had years of experience in municipal work. All communications should be addressed to the Director, International Municipal Exposition, room 421, 405 Lexington Ave., New York.

The Good Roads Machinery Company Opens Chicago Office

On and after July 1, 1919, The Good Roads Machinery Company will maintain a main selling office in Chicago, Ill., located in room 1203, Tower Building, Michigan Boulevard and Madison street. Since this company was first organized in 1898 it has maintained a large sales office at Fort Wayne, Ind. This office will be continued on a small scale for the present at least, but the main Western selling office will be located at Chicago. D. L. Philips,

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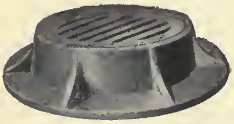
Lamp Posts

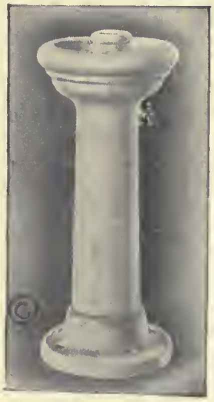
that light effectively and as ornamental as may be desired. Styles to meet every fund.

Man Holes

made right of the best materials available. A kind for every purpose.



Drinking Fountains



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that save in operating expense, meet every rigid sanitary law, look well and made to endure. Fewer loose parts mean less trouble and less expense. Styles for every location.

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So says one of our leading county officials in Illinois.

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that accomplishes the work of two or three good deputies and proves the work for you as you go along, is surely worth investigating.

City and County officials are equipping their offices with modern devices for the saving of time and energy.

Whether it is:—

ENGINEERING PROBLEMS
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APPRAISALS
EXTENSIONS
TRAVERSES

Or just the simple yet brain tiring multiplication, and divisions you will find that the Marchant will do your figuring for you and do it efficiently too.

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Write our nearest office:—

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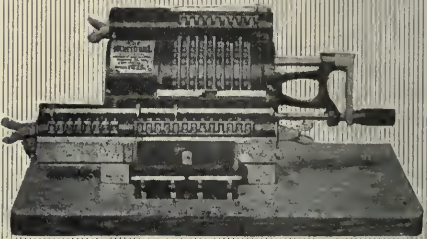
Philadelphia:	900 Bulletin Bldg.
Chicago:	237 Railway Exchange Bldg.
Denver:	1219 Foster Bldg.
Seattle:	262 Empire Bldg.

MARCHANT CALCULATING MACHINE CO.
Oakland California



former manager of the Boston office, will be in charge of the new Chicago office.

The Road Around the Ashokan Reservoir

The front cover of this month's Town and County Edition of The American City shows part of the highway which surrounds the Ashokan Reservoir, one of the largest reservoirs supplying the population of New York City with water. When the city of New York purchased the large acreage required for the construction of the Ashokan Reservoir in the Catskill Mountains just west of Kingston, N. Y., it became necessary to replace a number of the state and county highways with a road that would entirely surround the new reservoir. This new road, 32 miles long, was constructed of Texaco asphaltic concrete, furnished by the Asphalt Sales Department of The Texas Company during the latter part of 1913 and early in 1914.

The road was built by the Board of Water Supply of New York City, and Professor A. H. Blanchard, of Columbia University, and George W. Tillson, Consulting Engineer for the Borough of Brooklyn, were the consulting engineers retained by the Board for the work. Because of the invigorating air, the beautiful mountain scenery, and the smooth highway, the road around the Ashokan Reservoir is much traveled by automobilists on pleasure trips. The Reservoir is one of the largest reserve water storage basins in the world and is considered one of the greatest feats of modern engineering.

Changes in Staff of Morris Knowles, Inc.

Morris Knowles, Inc., Engineers, of Pittsburgh, Pa., announce the completion of their work for the U. S. War Department as supervising engineers at Camp Meade, Md., and Camp McClellan, Ala.; the conclusion of the engagement of Mr. Morris Knowles as Chief Engineer of the Housing Department, the Emergency Fleet Corporation, U. S. Shipping Board; the return of Capt. Maurice R. Scharff after eighteen months of service with the Corps of Engineers in France; the addition to the staff of Mr. Charles M. Reppert, formerly in charge of the Division of Design in the Bureau of Engineering, Department of Public Works, Pittsburgh, and more recently Deputy Chief Engineer of the Housing Department, Emergency Fleet Corporation, U. S. Shipping Board; and the transfer to the Pittsburgh office of Mr. A. B. Hargis, formerly Assistant to the City Engineer, Birmingham, Ala., and latterly Deputy Chief Engineer with Morris Knowles, Inc., at Camp McClellan.

Eastern Paving Brick Manufacturers' Ass'n Opens New Offices

William C. Perkins, Chief Engineer, Eastern Paving Brick Manufacturers' Association, formerly with the Dunn Wire-Cut Lug Brick Company, Conneaut, Ohio, who a few months ago was made Chief Engineer of the above Association, announces that Association offices have been opened at 1019 Lincoln Building, City Hall Square, Philadelphia, Pa. The Association will be glad to furnish information at any time concerning the construction of brick pavements or roads.

Test Your Sand

If you are an architect or an engineer supervising concrete construction, have you any means of checking the quality of concrete that is going in, or are you leaving it wholly to chance? "Better be safe than sorry," is the advice of Kolesch & Co., 138 Fulton Street, New York, manufacturers of the Universal sand tester. This tester furnishes a quick, simple, easy and accurate method of checking up the quality of a sand, for use in concrete for walls, foundations, dams, bridges, roads, sidewalks, reservoirs or other concrete products. The apparatus consists of a graded series of standard mesh screens (Nos. 6, 10, 20, 35 and 65), in a watertight casing; a series of glass vials communicating with the screens; and means for holding and making a graphical record of tests. The Universal sand tester is also adapted for measuring the size and uniformity coefficient of filter bed sands.

Small Portable Sand Tester for Concrete Work

Prominent Municipal Engineers Become Associated in Private Practice

Cards have recently been issued announcing that Rudolph P. Miller, formerly Superintendent of Buildings for Manhattan, and George E. Strehan, formerly Assistant Engineer in the Bureau of Buildings, have become associated in the general practice of engineering at 112 West Forty-second Street, New York City. The announcement states that this new firm is qualified to design building construction, masonry, structural steel, reinforced concrete and foundations, to conduct soil examinations and tests of materials, to make inspections and surveys, and to arbitrate disputes. They are prepared to undertake the formulation or revision of building laws and work involving city planning.

Detecting the Size of a Water Leak

A very interesting 36-page booklet issued by the Pitometer Company, 55 Duane Street, New York City, gives a most excellent series of illustrations, descriptions and advice regarding the use of the Cole Pitometer system in waterworks surveys. Copies of this booklet may be secured by writing the Pitometer Company and asking for Bulletin No. 5.

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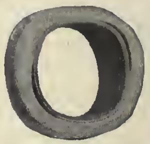

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THE ANDERSON COUPLING AND FIRE SUPPLY COMPANY
Kansas City Kansas

VOLUME XXI
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SEPTEMBER, 1919

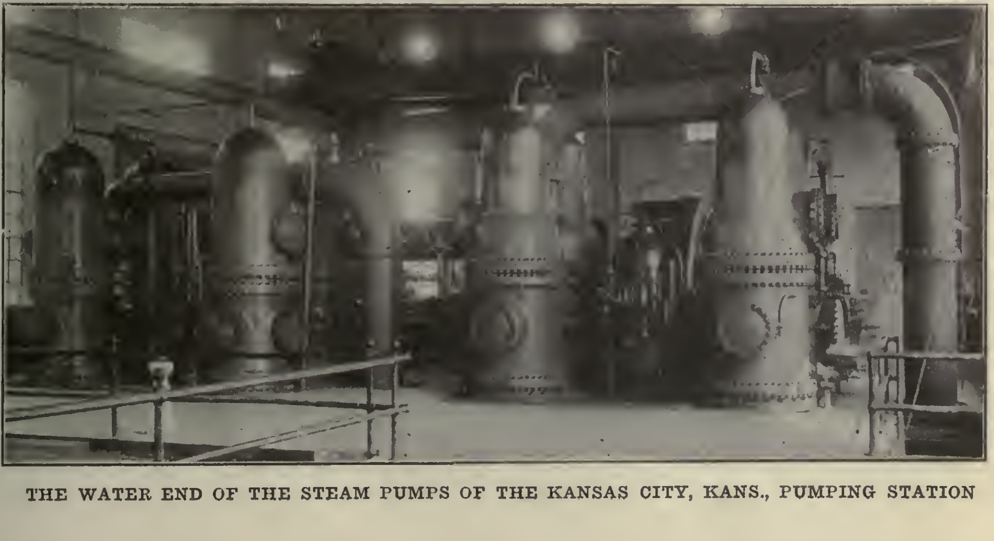
The Water-Works and Electric Plant of Kansas City, Kansas

Modern Equipment Properly Operated and Supervised Insures Economy

By H. C. Chapman
Water and Light Commissioner, Kansas City, Kansas

THE pumping and generating station of the Water-Works and Street Lighting Department of Kansas City, Kans., is located on forty acres of land at the northern limits of the city. By uniting these two closely related plants at one point and taking advantage of all the natural conditions favorable to economical operation, the city has been able to materially reduce the charges against the bonds which were issued for the construction of this plant.

The Missouri River is the source of the water-supply for the city, and also provides cooling water for the condensers of the light plant, thru an intake well of reinforced concrete and brick construction. This well is circular, with a foundation resting on bed rock about 30 feet below the normal stage of the river. It is divided into two independent units, each fitted with double sets of perforated screens for the removal of trash, leaves and other material which might prove injurious to the pumps. The valve arrangement at the intake well is such that either unit can be taken out of service for cleaning or repairs without disturbing



THE WATER END OF THE STEAM PUMPS OF THE KANSAS CITY, KANS., PUMPING STATION

PIPE GALLERY, WITH CONTROL TABLES AND FILTERS AT LEFT

the other. The intake well is connected with the low-service pumps located in the station, thru two independent 30-inch cast iron suction lines.

The Water Plant

The low-service pumping equipment consists of one 20-million-gallon, vertical, motor-driven Worthington centrifugal, one 15-million-gallon, horizontal, motor-driven DeLaval, and one 20-million-gallon, triple-expansion Holly pump. The low-service pumps are connected with the settling basins thru one 36-inch and one 30-inch cast iron discharge line with the valves arranged to permit passing any or all of the water thru the surface condensers of the light plant before it goes to the settling basin. The arrangement eliminates the necessity of having circulating pumps on the electric light plant generating unit.

The settling basins consist of three one-million-gallon units, one eight-million-gallon unit and one six-million-gallon unit. The one-million-gallon units are roughing basins, where the water is treated with alum and lime to remove the turbidity. After settling, the clarified water goes to the filter plant.

The filter plant consists of ten Jewell filters, each having a capacity of one-half million gallons daily, and nine new concrete filters, each having a capacity of one and one-quarter million gallons daily. The concrete filters are fitted with hydraulic controls for wash-water, drain and other valves. The filter effluent is collected in a concrete clear well of one million gallons' capacity, where it is sterilized with chlorine gas and whence it goes to the high-pressure pumps. The high-pressure pumping units consist of one 12½-million-gallon, cross-compound, condensing Snow pump, one 12½-million-gallon, cross-compound, condensing Allis-Chalmers pump, one 9-million and one 6-million duplex compound, direct-acting Worthington pump. The latter two pumps are maintained as reserve units only.

Water is delivered from the high-pressure end of the pumping station to the city thru one 30-inch and one 24-inch high-pressure main. At the southern limits of the city is located a 15-million-gallon storage basin at an elevation which will produce 125 pounds pressure at the pumping station. This storage reservoir floats on the distribution system in such a manner as to absorb all the excessive demands during the period of high uses, and is replenished at night during the period of lowest consumption. This feature eliminates all peaks at the pumping station and permits an economical continuous pumping rate thruout the 24 hours.

The distribution system consists of 152 miles of cast iron mains ranging from 4 to 30 inches in size, with a small quantity of 1¼-, 1½- and 2-inch mains located in the suburban districts. The average monthly consumption of water is 525,000,000 gallons, approximately 76 per cent of which is used for industrial purposes, chiefly for packing houses. The Water Department has at the present time 15,791 consumers, 7,700 of which are metered, the remainder being carried on a flat rate.

The Power Plant

Steam for both the water and light plants is generated at one boiler plant, consisting of two 500-horse-power Murray boilers, two 500-horse-power Bonus Freeman boilers, one 300-horse-power Babcock & Wilcox boiler and five 300-horse-power Heine boilers, all of which are horizontal, water-tube boilers equipped with Jones underfeed stokers, and two 600-horse-power Stirling boilers equipped with Westinghouse underfeed stokers.

Coal for the power plant is handled from railroad cars by a conveyor to overhead bunkers with a locomotive crane and clamshell buckets, and ashes are discharged from the same conveyor into railroad cars. The average coal consumption is approximately 210 tons per day.

The boiler feed-water unit consists of one turbine-driven, two-stage centrifugal pump and two duplex direct-acting pumping sets.

GENERATORS AND AIR DUCT, KANSAS CITY, KANS., ELECTRIC LIGHT AND POWER STATION

The Electric Generating Station

The electric generating equipment consists of one 5,000-K. V. A., two 3,125-K. V. A. and one 1,000-K. V. A., 2,300-volt, 60-cycle, 3-phase Allis-Chalmers turbo generators operating at 3,600 revolutions per minute, and equipped with condensers.

The switchboard is of double-bus construction and has 22 panels. All switches are solenoid-operated. The feeder panels are fitted with overload relays, and each generator panel is fitted with reverse-current relaps and solenoid operated field switches. Adjoining the switchboard are six constant-current regulating transformers used for series street lighting.

Just south of the main engine room is located a transformer station, in which are housed three 200-ampere, 2,300-volt, induction, potential regulators on lighting feeders, and two banks of 2,300-volt, 6,600-13,200-volt transformers having a capacity of 5,400 K. V. A., and one bank of 2,300-6,600-volt transformers having a capacity of 2,250 K. V. A.

Domestic lighting and small-power service is distributed at 2,300 volts, and all large-power and sub-station service is distributed at 6,600 volts. The distribution system consists of two 250,000-C. M. power feeders, running to the industrial section in the southern part of the city, and three 2,300-volt regulated feeders covering the residential and business districts.

The street lighting service consists of about 100 arc lights, 315-400-candle-power, nitrogen-filled lamps, and 1,100 80-candle-power nitrogen lamps, all operated from constant-current transformers at the generating station and divided into six circuits. The ornamental lighting system consists of 360 five-light standards, the top light being an all-night light, and 45 one-light standards.

The average monthly output at the station switchboard is approximately 3,500,000 K. W. H. net. Approximately 60 per cent of this output is taken by large consumers.

Philadelphia's Epoch-Making Charter

Philadelphia's new charter is an epoch-making piece of legislation. The most important single reform is the creation of a small single-chambered council of 21 members, one for each 20,000 assessed voters, in place of the big cumbersome body of 146 men elected by "pocket boros." Each member of the new body will receive $5,000 per annum, and will serve for four years. The basis of the new charter was the Bullitt bill, under which Philadelphia has been governed for 32 years, and which concentrated great authority in the hands of the mayor. The new charter, while adhering to the theory of a responsible mayor, provides a system of checks and balances to overcome the abuses which developed under the Bullitt charter.

The essential features of the new charter are:

(1) The creation of a small council of 21 members, already mentioned.

(2) The grant of authority to the city to do its own street cleaning and repairing, to attend to the collection of ashes, waste, rubbish and garbage.

(3) The establishment of a business-like budget for city finances.

(4) The institution of civil service provisions, among them one making political activity and the payment of contributions by policemen and firemen a misdemeanor, punishable by fine and imprisonment.

The establishment of a central purchasing department, the office of city architect, a permanent city planning commission and the appointment instead of the election of the city solicitor are also features of the charter. The Bureau of Health is raised to the rank of a department, and the Bureaus of Charities, Correction, and Recreation are consolidated in a Department of Public Welfare.

The new instrument fails in that it does not eliminate partisan nomination and election. To offset this defect, the legislature adopted a group of reform bills dealing with election matters. Chief among these are an amended personal registration bill, an amended uniform primary act and an act to safeguard "the intention of the voter" in marking his ballot.

Persons unfamiliar with Philadelphia's political condition may fail to appreciate how thoroly the agents of the contractor's machine controlled the voting. Thru control of the legal machinery governing legislation and election, they have upon repeated occasions thwarted the public will. These new laws safeguard the ballot and are no less important than the charter itself in freeing Philadelphia from those political conditions which brought upon her the brand "Corrupt and Contented."

What Are Teachers Paid in Your City?

Teachers! Practically every state has become interested in better salaries for public school teachers. Twelve states and hundreds of local communities have transmuted that interest into actual increases. It is still legally possible, however, as the National Education Association points out, for a teacher to receive the disgraceful salary of $40 per month, and that for only six months—an annual salary of $240, or 66 cents a day. There is no class of workers in the railroad service, not even the section hands, that does not receive 107 per cent to 500 per cent of the average salary paid teachers. Hod carriers earn from one and one-half to twice as much as teachers, blacksmiths two and one-half, and bricklayers about three times as much. When one considers the years of preparation and constant study required of teachers, such comparisons are ludicrous. Never have our public schools had greater responsibilities than to-day. If we are to have teachers who measure up to this responsibility, they must be paid living salaries.—From *Leslie's Weekly*.

The Scope of the New Iowa State Housing Law

By Dr. Curtis W. Reese

State Commissioner of Housing

ONE of the first and most important functions of the state is the protection and promotion of the home. It is the duty of the state to see that the home is not driven to the hovel and the tenement; that greed and avarice are not allowed to rob the home of pure water, fresh air, and sunlight; and that nothing interferes with wholesome home conditions.

While the home is the matter of first importance, all the legitimate interests of the state are inter-related and inter-dependent. Hence, any movement to improve home conditions is in league with all other movements to advance any legitimate interest. Especially is this true with reference to building and allied industries and professions. Every sanitary and healthful home is an argument for home-building and home-owning.

Housing Laws Must Be Constructive

The leaders of the better housing movement are pledged to no "cut and dried" methods. They contemplate no radical and sudden economic revolution. The housing problem is not to be solved by "economic panacea." From the first this movement has aimed to be thoroly constructive.

Exposing bad housing conditions is worth while only when it results in a practical constructive program—one that stays out of the clouds and on the ground. Better housing, like other reforms, results only when common sense is duly respected.

Ideally, a state housing law should apply to every section of the state. Actually, only certain fundamentals can so apply—such as space, light, and ventilation. Certain other minimum requirements for the city cannot apply to smaller communities till they reach larger proportions. But by gradually growing in line with a few fundamentals, and later coming under the complete requirements of a state housing law, smaller communities may prevent the development of unwholesome conditions and so avoid curative remedies such as must now be applied to the larger communities. To cure is an expensive way; to prevent is a cheaper, better way.

Stricter requirements may apply to the undeveloped areas surrounding our cities, and to all new construction, than can be made to apply universally or to the built-up districts of the cities.

The new Iowa state housing law aims "to promote health, safety and welfare of the people by regulating the light and ventilation, sanitation, fire protection, maintenance, alteration and improvement of dwellings; to define the classes of dwellings affected by the act, to establish administrative requirements, and to establish remedies and fix penalties for the violation thereof."

Provisions of the Law

This act, known as the Housing Law of Iowa, Chapter 123, Acts of the 38th General Assembly, was approved March 31, 1919, and became effective on July 4, 1919. It is mandatory for every city of 15,000 or more population, and for every city as its population reaches 15,000. All cities and incorporated towns having a population less than 15,000 are empowered to adopt ordinances covering similar matters. Its enforcement is in the hands of the health officer or Board of Health of each city. The State Board of Health is authorized to examine into the enforcement in any city, to take steps necessary to secure enforcement, and to apply provisions of this act to mining camps. The housing law, two enabling acts, and a concurrent resolution providing for the printing of the law, were passed without a dissenting vote.

The law may be summarized as follows:

1. *General provisions.* These provisions determine the minimum population of communities to be affected by the law. The Iowa law at present is mandatory for all cities of 15,000 or more population and permissible for every organized town and city in the state. The state board of health may apply certain provisions of the law to mining camps thruout the state.

Also, under this head a "dwelling" is defined as "any house or building or portion thereof which is occupied in whole or in part as the home, residence, or sleeping place of one or more human beings, either permanently or transiently." Dwellings are subdivided into (1) private dwellings, i. e., dwellings occupied by one family alone; (2) two-family dwellings, i. e., dwellings occupied by two families alone; (3) multiple dwellings, i. e., dwellings occupied other than as in (1) or (2).

Under this head we have many technical definitions which need not concern us in this brief outline.

2. *Dwellings hereafter erected.* Under this head are "the provisions which must be observed when a person proposes to build a new building or convert or alter to such purposes a building which is not a dwelling." Among the minimum requirements for a new dwelling are: that it shall not exceed in height 1½ times the width of the widest street on which it abuts when such street is measured from the building line to the opposite street line, or in any case not to exceed 100 feet (this does not apply to hotels); that each house shall have a yard; that every room shall have at least one window opening directly upon a street or public alley or other public space at least 16 feet in width, or upon a yard or court of certain dimensions and location; that the total window area of each room shall be at least one-eighth of the superficial floor area of each room; that all rooms shall have a certain minimum height and space (minimum height, eight feet three inches on first floor, seven feet six inches on second; minimum area 80 square feet, except kitchenettes, which may be 40 square feet); and that due provision is made for privacy, sanitation, ventilation, and fire protection.

3. *Alterations.* Under this head are the provisions which must be observed when a person proposes to alter an existing dwelling. These provisions do not allow a reconstructed building to offend against the standards set for new dwellings except in such details as are absolutely necessary. The chief advantage of this separate heading is that it enables one who wishes to alter a dwelling to find the requirements of the law without searching thru the entire law.

4. *Maintenance.* Under this head are provisions which the owner, and in certain cases the occupant, must observe with regard to the maintenance of a dwelling. The owner shall see that the water-closets, sinks, and the like are kept in good order; that the roof is kept so as not to leak; and that the building in general is kept in safe repair. In case of a private house, the occupant shall properly dispose of garbage, refuse, rubbish and other waste matter.

Overcrowding is not permitted. Certain animals shall not occupy a house with people, nor be kept on the same lot unless so permitted by the health officers.

Infected and uninhabitable houses are to be vacated.

5. *Improvements.* Under this head are the improvements required in the older buildings. Every old building affected by the act shall be made safe as regards fire escapes, ventilation, light, water, construction, etc. Social workers are familiar with the deplorable conditions in which many people live—old shacks, huts, dilapidated buildings, damp cellars, dark attics and the like. Such nuisances shall be abated.

6. *Requirements and remedies.* Before new dwellings are constructed or old dwellings converted or altered, specifications shall be submitted to the Health Officer and shall become a part of the public records. All such specifications must be properly examined, and, if found satisfactory, a permit issued before construction proceeds. Such permits are invalid after one year unless the work of construction has proceeded above the foundation walls. New dwellings shall not be occupied until the issuance of a certificate by the Health Officer that the requirements of the law have been met.

Persons guilty of a violation of this act shall be deemed guilty of a misdemeanor and dealt with accordingly. Tenants may be quickly evicted for violation of the provisions of the law.

The provisions of the law are to be enforced in each municipality by the Health Officer. The State Board of Health has general supervisory responsibility and power.

A brief summary such as this can touch only the high points. The underlying principle is that *no housing shall be permitted which impairs the health of the occupants or endangers the health of the community.* When any dwelling is dangerous to the health, safety and morals of its occupants, that dwelling is a menace to the health, safety and morals of the entire community. Hence, every unsanitary dwelling is a problem to be dealt with by the community and the state. The community and the state have tremendous responsibility and urgent duty in connection with the housing problem: they cannot shift the responsibility and they should not shun the duty.

The Social Loss Due to Bad Housing Is Even Greater
Than the Present Increased Cost of Good Housing

The Effect of the War on Paving Operations in Baltimore

By George E. Finck
Assistant Engineer, Paving Commission, Baltimore, Md.

THE city of Baltimore was in the midst of its intensive paving program in 1917 when it was forced to practically abandon it. The paving done in 1918 consisted only of portions of contracts let in 1917, which for various reasons had not been completed during the same year. Baltimore's paving operations became nationally known for the very good work accomplished at a minimum expenditure. Every modern type, as well as all improved methods of paving, were in use at this time, and the city's specifications were considered a standard for many other cities to adopt or consult.

The money appropriated for the various departments of the municipal government is for the calendar year, namely, January 1 to December 31. As the armistice was signed in November, the city had time before the end of the year to consider the advisability of renewing paving operations during 1919.

It was known that everything, including paving, had advanced greatly in price, but the various departments doing the work decided to resume operations on a basis of pre-war prices. The increased percentage of the cost of paving was so problematic that it was almost impossible to estimate it in advance. The figures finally arrived at were lower than the bid prices, and the engineers still contend that prices remain too high.

Before advertising for bids, the specifications were carefully scanned to see if there was any possible manner of substituting materials so as to decrease cost without lowering the efficiency of the paving. Only two changes were made, and only one of these has been taken advantage of by the contractor. Air-cooled or especially prepared slag was admitted in place of broken stone or washed gravel for the concrete base. It must be free from chemical or other properties which will affect the setting qualities of the cement or the ultimate strength of the finished concrete, and must be of the same size specified for the broken stone. Strange to relate, there has not been a single contractor to take advantage of the use of crushed slag; this is attributed partly to the fact that crushed cobble is permissible for use in concrete; and as most of our streets have cobble in them before being repaved, it can be readily seen why crushed slag has not been used. The other change was the use of crushed cobblestone as the coarse aggregate of cement concrete paving. This was due to the high cost of broken stone and to inability to secure it in suitable condition. The contractors generally have taken advantage of this change, and the city believes that both contractor and city have benefited thereby.

The city had over $2,500,000 to spend on improved streets and alleys, and the first lot of contracts was sufficiently large to invite close bidding. The amount of money stated is for paving only and does not include that spent for water mains or sewer extensions in advance of improved paving. Practically all of the allotted money has been disposed of, either for completed work or for that under contract. The contracts vary in amounts from $5,000 to $150,000, giving the large or the small contractor every consideration to bid on such work as he was capable of handling. It can be readily seen that the contractor was given every opportunity to bid at a fair price, the city eliminating, with only few exceptions, all streets with railway tracks, so as to reduce the prices to a minimum.

Intense interest was displayed by both the contractors and city officials at the opening of the first bids in March, 1919. Since then we have let several contracts, but the prices have not varied except for a very small decrease since the first bids were received. This is attributed to the continued high rate of wage for unskilled labor, combined with the extremely low decrease in cost of materials. Cement, for instance, has slightly decreased in cost between the times of our first and second lettings of contracts, but freight rates continue high. The increase in cost of vitrified and granite blocks over that of 1917 has not altered during the current year, while wood block has advanced greatly.

The table shown below, indicating average of accepted bid prices for 1916, 1917 and 1919, and the percentage increase in 1919 over 1917 by the Paving Commission of Baltimore, is quite an interesting study. The average prices include June bids, so that the table is up-to-date.

TABULATION OF ACCEPTED BID PRICES FOR 1916, 1917 AND 1919

	Sheet Asphalt Paving Per Sq. Yd.					Vitrified Block Paving Per Sq. Yd.						V. B. Gut. Per Sq. Yd.		Granite Block Paving (New Blk.) Per Sq. Yd.					
	City Area				City or Rw.	City Area Rw.						City Ar.		City Ar.		Railway Area			
																		Liners	
Year	1½″ Wear Sur. 1½″ Bin. Old Conc. Base	1½″ Wear Sur. 1½″ Bin. 5″ Conc. Base	1½″ Wear Sur. 1½″ Bin. 6″ Conc. Base	1½″ Wear Sur. 1½″ Bin. 6″ Conc. Base	Binder Delivered	3″ Blk. Cem. Fil. Sand Cem Bed 4″ Conc. Base.	3½″ Blk. Cem. Fil. Sand Cem. Bed 4″ Conc. Base	Cem. Fil. Sand. Cem. Bed 4″ Conc. Base	Cem. Fil. Sand Cem. Bed 5″ Conc. Base	Cem. Fil. Sand Cem. Bed 6″ Conc. Base	Cem. Fil. Sand. Cem. Bed 6″ Conc. Base	Cem. Fil. Sand Cem. Bed. 5″ Conc. Base	Cem. Fil. Sand. Cem. Bed 6″ Conc. Base	Cem. Fil. Sand Cem. Bed 6″ Conc. Base	Asp. Fil. Sand Cem. Bed 6″ Conc. Base	Cem. Fil. Sand Cem. Bed 6″ Conc. Base	Asp. Fil. Sand Cem. Bed 6″ Conc. Base	Cem. Fil. Sand Cem. Bed 6″ Conc. Base	Asp. Fil. Sand Cem. Bed 6″ Conc. Base
1916	.90	1.33	1.42	1.49	6.41	2.16	1.98	2.14	2.08	2.18	2.23	2.09	2.15	3.22	3.15	3.26	3.39	3.88	3.96
1917	1.22	1.67	1.73	1.81	6.15	....	....	2.58	2.41	2.46	....	2.40	2.46	3.80	4.00	4.03	4.25	4.25	....
1919	1. 7	2.80	2.87	3.07	7.78	....	....	....	3.75	3.89	....	3.68	3.93	....	....	....	....	....	....
% Increase 1917 to 1919	45	67	66	69	27				55	58		53	59						

	Gr. Blk. Paving (Red. Blk.) Per Sq. Yd.					G.B.Pav. (Old Blk.) Per.Sq. Yd. City Ar.		Durax Paving Per Sq. Yd.			Wood Blk. Paving Per Sq. Yd.				Cem. Sq. Yd. City	Repaving Per Sq. Yd. City or Railway Ar.						Old Span or Vit. Blk. Headers Per Lin.Ft. Cy. or Rw. Ar.	
	City Ar.		Railway Ar.					City	Rw. Area		City	Railway Ar.											
					Liners								Liners										
Year	Cem. Fil. Sand Cem. Bed 6″ Conc. Base	Asp. Fil. Sand Cem. Bed 6″ Conc. Base	Cem. Fil. Sand Cem. Bed 6″ Conc. Base	Asp. Fil. Sand Cem. Bed 6″ Conc. Base	Cem. Fil. Sand Cem. Bed 6″ Conc. Base	Asp. Fil. Sand Cem. Bed 5″ Conc. Base	Cem. Fil. Sand Cem. Bed 5″ Conc. Base	Cem. Fil. Sand Cem. Bed 6″ Conc. Base	Cem. Fil Sand Cem. Bed 6″ Conc. Base	Asp. Fil. Sand Cem. Bed 6″ Conc. Base	Asp. Fil. Sand Cem. Bed 4″ Conc. Base	Cem. Fil. Sand Cem. Bed 6″ Conc. Base	Cem. Fil. Sand Cem. Bed 6″ Conc. Base	Asp. Fil. Sand Cem. Bed 6″ Conc. Base	Cem. Conc. Paving 6″ Thick	Asp. Blk. Cem. Filler Sand Cem. Bed	Vit. Blk. Cem. Filler Sand Cem. Bed	Gr. Blk. Sand Filler Sand Bed	Wood Blk. Asp. Filler Sand Cem. Bed	Scoria Blk. Cem. Fil. Sand Cem. Bed	Cobble Sand Bed	Cem. Fil. Sand Cem. Bed 5″ Conc. Base	Cem. Fil. Sand Cem. Bed 6″ Conc. Base
1916	2.30	2.52	2.36	2.51	3.20	1.59	1.39	3.75	3.75	4.15	3.50	4.10	4.10	3.67	1.10	.53	.66	.56	.68	.70	.37	.12	.17
1917	2.77	2.97	2.93	3.15	3.50	2.70	2.39	....	....	....	3.50	....	3.90	....	1.38	.57	.64	.50	.90	.85	.39	....	.29
1919	3.96	....	....	....	4.36	2.62	....	....	....	....	....	4.96	....	....	2.05	1.01	1.51	.92	1.58	....	.88	2.50	1.16
% Increase 1917–1919	43				25	-3									48	77	136	84	76		126		300

	Curb Hdrs. Lin. Ft. Cy. or Rw. Ar.	Curb Per Lin. Ft. City Ar.						Miscellaneous Per Sq. Ft. City Ar.		Per Cu. Yd. City or Rw. Ar.		City	Rw.	Each Sq. Yd City	Rw.	Old Material Will Purchase Per Sq.Yd. City or Rw. Ar.	Lin. Ft. City		Ton. City. or Rw. Ar.
		Ar.Conc.Curb																	
Year	Redressing 1½″ from Top of old Stone Curb	6″ Wide in Place	Reset	Old Stone Curb & Circles Redressed and Reset	Old Stone Curb & Circles Redressed in Place	Old Stone Curb & Circles Reset in Place.	6″ Gr. Curb Circles In Place	Removing and Renewing Cement Footways	Removing & Renewing Brick Footways	Old Flagstone Red. & Reset on Sand Base	Concrete in Place	Grading	Grading	Old Gutter Stone Red. & Set as Fenders	Mixed & Place Cement Grout in Ballast in Steam Railway Area.	Old Cobble & Gutterstone	Old Flagstone	Old Curb Stond.	Old Cast-Iron Gutter Plates
1916	.24	.52	.21	.37	.24	.21	2.25	.10	.09	.13	5.69	.84	.96	.63	.30	.0054	.0093	.0093	4.91
1917	.28	.67	.23	.48	.33	.31	2.61	.13	.09	.19	5.37	1.44	1.32	1.50	....	.0020	.0055	.0055	6.95
1919	.40	.87	.41	.70	.41	.39	....	.26	.22	....	10.40	2.47	2.80	1.67	....	.0024	.0063	.0063	6.75
% Increase 1917 to 1919	43	29	79	46	24	26		100	144		94	71	112	11		20	15	15	—3

The price quoted on sheet asphalt paving without a base is the bid we usually receive for repairs in connecting one improved paving with another, and should not be considered as a fair price on a large amount of this type of paving where the yardage would justify a more reasonable figure. The State Roads Commission has received a bid of $1.35 per square yard for sheet asphalt paving, 1½-inch wearing surface, 1½-inch binder on a concrete base already installed for use on the Washington Boulevard, where the paving necessitates an average 10-mile haul from the plant to the location of work.

The prices for vitrified block paving are for alleys only, as no bids were advertised for paving an entire street with this type of material. No contracts were advertised for any new granite block paving or any wood block paving, except on concrete alley work where 3-inch x 3½-inch wood block is used to pave around manholes. The large increase in price of old granite block or vitrified block headers is due to excessive bids received in two contracts. We did not use this type of headers on these contracts, as the price was exorbitant; in its place we used a curb header. The price for cement concrete paving in the above table is that received for public alleys. For paving private alleys where many are narrow and blind, the average price for thirteen bids involving an expenditure of $400,000 was $2.25, which is an increase of 40 per cent over those received in 1917.

The coöperation between the contractor and the city officials to reduce prices and the percentage of increase in prices for this year leads us to the question of what effect the increase in prices has had on the selection of materials. This is answered in a few words—more asphalt paving. There will be no granite block paving or vitrified block paving (except gutters and alley returns) laid in Baltimore this year on account of the excessive cost of the blocks themselves, due principally to the high freight rates. All liners along rails are redressed granite block with a cement filler, as the city has the old block, while the cost of wood block is too high to permit their use as liners. Paving in railway area is sheet asphalt with granite blocks redressed between the outer rails at main street crossings.

For alley paving we continue our standard of 1:2:4 mix concrete with ¼-inch expansion strips not more than 100 feet apart. The policy of the city in using a 5-inch base for light traffic streets and a 6-inch concrete base for all others is being strictly adhered to, except that in a few instances, due to very poor subgrade, an 8-inch or 10-inch base was used. The so-called advantages of a heavier base are not enough to cause the officials to adopt it as a standard.

The final synopsis is that Baltimore is paving in 1919 as in 1917, but in mileage of streets paved it is obtaining only about 60 per cent, chiefly on account of high labor costs. More and more cities are realizing that the present high prices are not going to recede, and hence are pushing their paving programs so that pavements may not wear out before repairs are begun.

Poison Essential in Anti-Rat Campaign

Barium Carbonate Proves Effective in Norfolk, Va.

Good results were obtained recently in a rat eradication campaign in Norfolk, Va., coöperated in by the Bureau of Biological Survey of the United States Department of Agriculture, and the city health department. Methods of extermination recommended were systematic trapping and poisoning. An excellent poison bait was found in barium carbonate rubbed into the edible part of slices of cantaloupe. Other very effective baits, with barium carbonate, were sliced tomatoes rolled in the poison, and green corn, canned corn, ground meat, and ground cheese, mixed in the proportion of one part of barium carbonate to four parts of bait. These poisoned baits were placed in the rat runways two or three nights in succession. After poisoning operations much permanent relief may be obtained by following up with systematic trapping, but in an initial campaign of this magnitude poisoning operations are essential.

New Concrete Dam of the Oklahoma City Water-Supply

The Work Begun in February, 1917, Is Now Practically Complete

IN May, 1916, after a number of lengthy reports by well-known engineers, a bond issue was authorized for Oklahoma City to secure a new and adequate surface water-supply. Prior to that time, the sole source of municipal water was the North Fork of the Canadian River, which winds thru the city and at times during the summer completely dries up. A shallow pool had been formed at the pumping station. where every drop of water flowing down the North Fork was impounded and pumped to the city. This water was of very poor quality, being practically always turbid from the gumbo which is so common in the vicinity. At several times a water famine was threatened, and even the fire protection of the city became precarious.

THE OKLAHOMA CITY, OKLA., RESERVOIR DAM UNDER CONSTRUCTION

Many of the manufacturing establishments thruout the city used artesian well water, which can be secured by drilling. This was particularly the case in the packing town district, where a number of large meat-packing establishments are located.

The new water-supply, which was continuously fought for and advocated by the Chamber of Commerce, is secured from the North Fork of the Canadian River at a point seven and one-half miles west of the city. At this point a concrete dam of the Ambursen type was begun on April 22, 1918. When the last section is closed, the water will rise and form a circular impounding reservoir, two miles in diameter, with a capacity of seven billion gallons.

This reservoir will be one of the largest in the Southwest, and will furnish a supply of water five times as great as that required by the present population of Oklahoma City. This excess storage capacity is merely incidental, and was decided upon when it was found it would be cheaper to dam the entire lake area than to restrict the reservoir to a smaller size. A wide strip of land has been purchased by the city around the reservoir as a sanitary precaution against undue contamination. Within this area a driveway is to be constructed, which it is expected will become a favorite trip for automobilists.

WHAT PLANS ARE YOU MAKING FOR FIRE PREVENTION DAY, OCTOBER 9? See page 251.

Management of Municipal Water-Works

The Introduction of a Budget System, Metering and Water Waste Surveys Have Increased the Economy of Operation of the Sault Ste. Marie Water-Works

By W. M. Rich
City Manager, Sault Ste. Marie, Mich.

THE Sault Ste. Marie, Mich., water-works are owned and operated by the city. The pumping station is located on the St. Mary's River, about four miles west of the heart of the city. The plant consists of two 5-million-gallon Holly steam pumps and two 150-horse-power Morrison suspension boilers. The pumps have been in service sixteen years and are in very good condition except for the wear and tear that would naturally occur in that length of time.

The intake crib is located on the south channel bank of the St. Mary's River, about 1,500 feet from the shore, in approximately 32 feet of water. The intake pipe is 36 inches in diameter and is laid deep enough to feed the pump well by gravity. The water may be pumped either from the well or from the intake pipe direct. The pumps discharge into a 24-inch main leading to the city. This discharge pipe is equipped with a Venturi meter and a register-indicator-recorder instrument supplied by the Builders Iron Foundry.

Danger From Contamination Minimized

From the above description it will be noted that there is no question about the abundance of the water-supply. However, as to its purity, there is a potential danger of contamination owing to the great traffic that plies the river during eight months of the year. Then, too, during the spring when the ice is going out there is danger of pollution, and again in September when the surface waters from the large areas draining into Lake Superior begin to be felt.

To overcome any possible danger from contamination of the water from any of the above-mentioned sources, we have installed a solution-feed, automatic-control chlorinator. We have equipped a laboratory where daily tests of the water are made, and in this manner every precaution is taken to protect the health of the people. Since the chlorinator was installed, about fourteen months ago, there has been only one case of typhoid fever contracted in the city, and in tracing the case we learned positively that it could not be attributed to the water.

The Operation of a Municipal Water-Works

In dealing with a modern water-works system, there is a great variety of features that enter into its make-up, and in discussing briefly such a plant as operated municipally, it would be well to adopt a classification for this discussion. While water-works plants may vary considerably in different parts of the country, and suggestions applicable to one plant may not apply to another, the following classification will fit very nicely the plants with which I am most familiar.

The physical features of a water-works system may be broadly divided into supply to pumps, pumping station, water-mains, service connections and meter services. In a plant such as the one at the Soo, the supply to pumps simply includes the intake, the pump well and the chlorinator. However, in some other plants, the "supply to pumps" department might have to be subdivided so as to embrace sedimentation tanks, sand filters, and softening apparatus. The pumping station, service connections and meter services would not vary materially in any water-works system, but in some cases the distribution system might have to include stand-pipes and reservoirs.

In addition to the physical features of a water-works system, there are the department for taking care of the revenue collection, and the department to provide for interest and retirement of bonds. In my opinion these last two divisions are very important, and right here is where the danger lies when a water-works system is opened and operated by a municipality. When a plant is municipally operated there is a tendency to make a political football out of it, and at each change of administration there are liable to be changes in all the important offices in the department. As a consequence, there is no fixed responsibility or authority, the revenue collections are neglected, rates are not adjusted to meet conditions, and in many instances the funds for retiring bonds are lost sight of completely.

In order to make a success of the system, there must be some one person to hold responsible, and the authority must be undivided. Under the commission-manager plan of government, this system of conducting a water-works system is possible, and there is absolutely no reason why the system should not be a profitable and well-managed enterprise.

A Budget System Essential to Success

In order to operate a municipal waterworks system successfully, a budget system must be adopted and strictly adhered to. The costs of operation and maintenance must be very carefully kept, and from these records the question of proper rates determined. As an example of the budget system as applied to the Soo Water Department, the previous outline takes care of each division very adequately.

These divisions are themselves divided into expense and capital outlay accounts according to the budget classification. Expense comprises all items of expenditures necessarily incurred for current administration, operation and maintenance of the several departments; those for which the funds are reimbursed; and those for materials and equipment in the nature of renewals or replacements which do not add to the capital assets of the corporation.

The Expense Classification is in turn divided into Personal Service Expense, which is the cost of direct labor of persons in the regular or temporary employment of the corporation not chargeable to Capital Outlay; Contractual Services, which are activities performed under express or implied agreement, inviting personal service plus the use of equipment or furnishing of commodities; Operating Supplies Expense, which is the cost of commodities of a nature that after use show a material change in, or an appreciable impairment of, their physical condition, and rapid depreciation; Materials for Maintenance Expense, charges for commodities of a permanent nature in a new, unfinished or finished state, entering into the construction, renewal, replacement or repair of any land, building, structure or equipment; and Capital Expense and Contribution, which consists of rent, taxes, insurance, interest, retirement of bonds, contributions and pensions.

Capital Outlay includes all expenditures which increase the capital assets of the corporation. This includes land and land improvement, buildings and public improvements, teaming equipment, motor vehicles, furniture and fixtures, and any other additions to equipment which may be necessary and useful in the operation of the corporation, and which may be used repeatedly without appreciable impairment of their physical condition and have a calculable period of service.

In arranging the budget for the year, all of these accounts are taken into consideration, and the total appropriation is carefully prepared. The receipts are also carefully estimated, and the estimated surplus is thrown into the departmental division for interest and retirement of bonds.

Increased Costs Make Accurate Accounting Vital

The need for accurately accounting for the expenditures of the funds of a waterworks system is obviously greater now than at any previous time, owing to the fact that the cost of everything entering into the operation and maintenance of the system has greatly increased in the last two or three years, while in most cases the water rates have remained the same, or, if they have been raised at all, have not been raised sufficiently to offset the greatly increased cost.

Because of the increased cost of operation and maintenance, it is more important than ever that the great wastage that occurs in practically all American cities be stopped. I think I shall be borne out in the statement that in the majority of cities a large proportion of the water that leaves the pumping station never performs any useful work. Some of it is wasted thru the ground owing to poor construction of the mains and service connections; some is wasted thru faulty plumbing and carelessness of the consumer where there is no meter; and in some cases a considerable amount of water is wasted in the winter time where it is necessary to leave the faucets open to prevent freezing. All of this wastage means a great loss to a city financially, besides reducing the pressure and causing a diminution of the supply available for fighting fires.

Water Waste Inimical to Economical Operation

In my opinion, too much stress cannot be laid upon the wastage and leakage of water. It is a comparatively easy matter to detect and repair the larger proportion of the leaks in the distribution system by means of a systematic and comprehensive survey and the use of suitable equipment for the purpose of detecting leaks. The stopping of the waste of water by a thoughtless public is, however, a much more difficult matter. Where a great number of the domestic consumers are on a flat rate, it has been the custom in the past to make a house-to-house inspection and instruct the public in the correct use of water. This is not particularly successful, because wastage stopped to-day may begin again soon and continue until the next inspection. I do not mean to say that the majority of the people deliberately waste water, but they do not realize what a small leak will amount to in twenty-four hours and consequently do not give the matter much thought. The only practical method of stopping excessive waste is to install meters on all services.

Metering Checks Waste

The reason for metering all services is two-fold: first, it is the only fair and equitable way to sell water; and, second, it is the only practical way in which to prevent waste. Where cities have been completely metered, they have been successful in checking the waste.

Once a city has started out on a definite program of metering all services, it is confronted with the problem of determining a fair and equitable meter rate. As an example of what this problem amounts to, I will give a brief discussion on the conditions existing in Sault Ste. Marie at the time the commission-manager plan went into effect and we were confronted with the fact that, owing to the increased costs, the revenue from the water-works department ceased to be sufficient to meet operating and maintenance costs.

Practically all the large consumers of water were metered at that time, and a number of the residences, amounting in all to about 10 per cent of the total number of services. No study had ever been made, however, of the probable legitimate use of water as compared with the total amount pumped. A careful study was therefore undertaken in order to determine as accurately as possible just what the distribution was, and an effort was made to secure information that would enable us to adopt rates that would be fair to all. The average daily pumpage was approximately 3,500,000 gallons, which, based on a population of 14,500, amounts to 240 gallons per capita daily. This average daily pumpage has been reduced to 3,000,000 gallons, or 207 gallons per capita daily. The latter figure is too high, but it proves conclusively that some leaks and wastage have been stopped. After determining approximately the amount of water that should be used, I found that over 50 per cent of this amount was consumed by manufacturing and industrial plants.

Determining Equitable Meter Rates

With the information obtained, a careful study was made to determine upon a schedule of fair rates chargeable for metered services. The meter rates finally decided upon were based upon the New England Water Works Association form of rate. The schedule recognizes the principle of the sliding scale and provides three rates for users up to 1,000,000 cubic feet per quarter. For consumers using over 1,000,000 cubic feet per quarter, a straight rate per 100 cubic feet is provided.

In addition, a service charge is provided for the privilege of being connected to the mains, but this does not include the use of any water. This charge is an alternative for the minimum rate and, I believe, represents a more logical and just arrangement. Under the service charge a specific amount is collected for the service and the meter, regardless of whether any water is drawn or not. If water is drawn, it is charged for, and the amount charged for water used is added to the amount of the service charge.

The service charge is made up of the following items:

First, a sum per annum representing approximately the cost of reading the meters, keeping the records, making out the bills, etc. For meters read quarterly, it is estimated that $1 per annum is a sufficient allowance.

Second, an amount which will represent the approximate value of water which passes a meter without being registered. The amount lost per service will range from nothing to 13 cubic feet per day for a ⅝-inch meter. On this basis a charge of $2 per annum is allowed for a ⅝-inch meter. The charges for the large meters are proportional to their relative capacities.

Third, an amount which will give a reasonable return on the money invested in the service and the meter. It is estimated that 10 per cent is a fair allowance for the depreciation in the service pipe and meter, and for the interest on the money invested in them.

The rates arrived at for the sale of water in the Soo, to meet the local conditions, are as follows:

Domestic rate, up to 10,000 cubic feet per quarter, 9 cents per 100 cubic feet.

Intermediate rate, 10,000 to 100,000 cubic feet per quarter, 7 cents per 100 cubic feet.

Manufacturing rate, 100,000 to 1,000,000 cubic feet per quarter, 5 cents per 100 cubic feet.

Over 1,000,000 cubic feet per quarter, 5 cents per 100 cubic feet straight.

The new schedule of rates is working out very nicely, and there has been very little criticism from the public, even tho the meter rates were increased over the old rates, owing to the service charge.

Acknowledgment.—From a paper read before the League of Michigan Municipalities .

Daylight Saving by Local Ordinance

To the Editor of the American City:

The National Daylight Saving Association has every reason to believe that 90 per cent of the people in the United States want Daylight Saving continued. To meet the situation caused by the repeal of the Daylight Saving Act by Congress over the President's veto, we propose that cities and towns in favor of the plan adopt local ordinances restoring Daylight Saving from May 1 to October 1. The adoption of such ordinances would result in the practical continuance of the benefits of the Act next summer and thereafter.

The most direct and democratic way thru which the people can deal directly with a problem of this kind is by way of appeal to local Boards of Aldermen. The Board of Aldermen of the City of New York have already by unanimous vote expressed themselves in favor of Daylight Saving, and other eastern and western cities have similarly expressed themselves. There is no doubt that the larger communities thruout the country will vote to turn the clock forward again next summer.

The New York Daylight Saving Association is recommending that this be done a month later than was the case during the war—that is, to start on the last Sunday in April instead of the last of March, and to end a month earlier, the last Sunday in September instead of the last Sunday in October. This would give a five-months' period instead of seven. The main saving comes during the five months.

In his two veto messages, President Wilson admirably expressed the advantages of Daylight Saving, and we are now beginning a national movement to preserve those advantages for the masses of the people by local action. If mayors and other city officials will take the trouble to call a hearing on a proposal to continue the Daylight Saving Scheme by means of local ordinances, they will find a surprisingly large number of citizens unqualifiedly in favor of the movement. To a large extent it lies in the hands of the local representatives of the people to remedy the conditions caused by the failure of Congress to pay due heed to the health and comfort of the majority of our citizens.

If those who favor daylight Saving had spoken as loudly as the few who opposed it, it never would have suffered from a Congressional defeat. The trouble is that the people were over-confident and did not think it necessary to address their legislators. City officials now have an opportunity to repair the damage just done. Any help that the Association can render in this connection is at their disposal.

MARCUS M. MARKS, President,
National Daylight Saving Association, 200 Fifth Avenue, New York City.

The Utilization of Sewage Sludge in Birmingham, England

Shallow Tanks and Thoro Digestion Furnish Sludge Without Odor and With Great Possibilities as an Organic Fertilizer

SQUEEGEEING SETTLED SLUDGE FROM TANKS AT SALTLEY, BIRMINGHAM SEWAGE WORKS

Sludge screen with mechanically-operated rakes for cleaning seen at right

THE shortage of organic fertilizers thruout the world has greatly increased the expense of intensive farming, which is so important in the truck gardens surrounding all of the larger cities. One of the greatest wastes of nitrogenous matters is in sewage, and it has been claimed that millions await the man who will devise an economical method of reclaiming this material.

A long step towards the economical and satisfactory reclaiming of sewage sludge has been taken in Birmingham England, under the direction of John D. Watson, who has very successfully operated the stupendous sewage disposal work of Birmingham for many years.

Settling the Sludge

After the inflowing sewage from a population of about 750,000 persons passes thru the detritus tank, from which the heavy solids are dredged by an electrically operated dredger, it flows thru the five sedimentation tanks working in parallel, each with a capacity of slightly more than 1,000,000 gallons. The crude sludge retained in the sedimentation tanks alone amounted to 1,523,000 cubic yards during the past four years, or an average of 380,750 cubic yards per year, the whole of which was transferred to the 39 sludge digestion tanks or lagoons possessing a total capacity equal to 28,250,000 gallons.

The density of the sludge removed depends chiefly upon the frequency of the cleaning operation. In 1915 the tanks were emptied once in two or three weeks, when the average water content of the sludge was 87 per cent, whereas the cleaning operation during the last four years yielded sludge with a water content of about 92.5 per cent.

Primary Sludge Digestion

The sludge from settled sewage of the Saltley, Birmingham, plant is squeegeed to the sumps, is screened by bulb rails placed 8 to 10 inches apart which are cleaned by mechanically operated rakes, and then pumped to a great digestion tank, where for about two months it undergoes septic action, which reduces the volume by about 25 per cent.

The digesting tanks used at first consisted of an existing installation of 20 tanks, 16 of them with an aggregate capacity of 4,500,000 gallons, and 4 having a total capacity of 2,700,000 gallons.

For the first two years the digestion operations were conducted in two stages in this installation of 20 tanks. The 16 tanks were used for primary digestion, and the 4 larger ones for the secondary digestion. Two stages were adopted, as it was found in the very early days that vigorous fermentation was better maintained in this way, and tank space was saved to such an extent by pumping from one tank to another that the second pumping was economical when compared with the prospect of an increased capacity. It was soon discovered, also, that inoculating raw sludge with ripe sludge obtained from the secondary tanks had an excellent effect upon the "speeding-up" pro-

THE PRIMARY SLUDGE LAGOON WITH ACTIVE FERMENTATION IN PROGRESS. THE HEAVY SCUM IS COVERED WITH LARGE BUBBLES

cess. Further, temperature was too obviously a beneficial factor in the success of the process to be ignored.

In cold weather the sludge is transferred by the main set of pumps from the particular sedimentation tank whose turn it is to be cleaned out into the selected digestion tanks. Simultaneously, some of the ripest of the available sludge is forced by a small pump into the same delivery main in the proportion of 1 to 4, thus inoculating at the earliest possible moment the fresh sludge with fermentative organisms. In addition, steam from one of the boilers is injected into the delivery main to produce temperature conditions most favorable to fermentation. In moderately warm weather, steam injection is abandoned, and during the heat of summer neither inoculation nor steam injection is used. The biological factor governing the digestion process must necessarily be somewhat complicated, and it is only by the most careful observation of the conditions which bring about the right balance of living organisms that success can be attained.

The sludge, which varies constantly in character, amounts to about 1,000 tons per day, and is drawn thru a locality literally surrounded with dwelling-houses, factories and shops. Formerly this gave rise to loud and serious complaints; but since the intake and discharge pipes of the sludge digestion lagoon have been placed beneath the heavy scum, there is little or no trouble from odors.

Functions of Lagoons

Five miles below the Saltley, Birmingham, plant are the Minworth works, which form part of the installation of 39 tanks. These were formed by surplus soil from the trickling filter site and dry sludge from the drying-bed area, and they perform three functions: first, they give time for the completion of the fermentation process; second, they permit, with almost no detriment to the installation, the admission of humus from the trickling filter, flushings from tanks, and flushings from distributing pipes; third, they act as decanters of supernatant water.

The first function is, of course, the primary purpose of the lagoon. The average requirement for digestion for the past four years has been equal to a storage of about four months. It has been proved conclusively that sludge dries more rapidly when the digestive process has been carried to exhaustion, before it is pumped to the drying area; hence the economy of ample primary tankage.

The second function is the most important. The "humus" or mineral residue from the trickling filter, like the sludge discharged from activated-sludge plant, is a valuable fertilizer. At first it was decided that the humus might be pumped back to the detritus tank; but, inasmuch as this was five miles away, it would not be economical. Second, it was thought that a second lagoon might be set aside for the humus, but experiments showed that injection into the sludge lagoons and mixing with large proportions of well-digested sludge was far more satisfactory.

Water rises to the surface of the lagoon when fermentation is exhausted, and may readily be decanted thru the frame shown in the illustration. When it is recalled that by reducing a sludge which is 90 per cent water to an 80 per cent sludge, one-half of the water is removed, the importance of decanting as much liquid as possible is evident.

The Drying Beds

The completely digested sludge is pumped direct to the drying beds, which are immediately adjacent. The drying beds con-

THE SECONDARY SLUDGE LAGOONS WHERE WATER IS DECANTED TO REDUCE WATER CONTENT OF SLUDGE

sist of plots of ashes 150 feet square, with a total area of 54 acres. All the plots are under-drained with 4-inch agricultural tile, in herring-bone fashion, which conveys the water to a sump, whence it is pumped to trickling filters. Each drying bed is formed by earth banks 2 feet high, and the area is provided with a system of small gage tracks for the removal of the dry sludge.

The time for drying varies with the weather, and when the sludge has become sufficiently dry to be lifted in lumps, it is taken to the sludge dump, which is 15 feet high and several acres in extent.

Utilization of Nitrogen

With the object of recovering from the dry sludge nitrogen and other products of distillation, boat-loads of it have been sent to the Saltley gas works each week for some time. Altho the results cannot be definitely stated until more producers are installed, still the engineer of the gas works states that he is willing to pay about 75 cents a ton for the sludge delivered at the Saltley works.

With a view to securing all available fertilizer elements possible from the sludge, the directors have recently entered into a contract with a fertilizing syndicate under which the syndicate agrees to treat about one-half of the Birmingham sludge with a view to recovering fats and fertilizers. Work on this was upset by the outbreak of the war. However, work is to be begun again shortly, and some very interesting and valuable results are expected. The success of this work is being watched with great interest by sewage engineers thruout the world.

Other Work in England

In Tadcaster, England, a centrifugal machine for the removal of suspended matters from crude sewage has been developed with considerable success. This eliminates the necessity of large sludge lagoons, and it is claimed that these machines are reducing suspended matters in a sewage to 10-20 parts per 100,000. The sludge produced will not contain more than 70 to 75 per cent moisture, while in the investigations at Tadcaster it has been found that the nitrogen content was 4 per cent, as against 2 per cent for the local precipitated tank sludge.

A fifteen-year lease has been granted recently to a company that will take and dry all the sewage sludge pressed cake at the Halifax works. This dried product will be treated for the recovery of grease and for a fertilizer base.

A 15-FOOT BANK OF DRIED SLUDGE, ACRES IN EXTENT, AWAITING THE DISCOVERY OF A CHEAP METHOD OF CONVERTING IT INTO FERTILIZER

Private and Municipal Central Station Lighting and Power Plants in the U. S.

STATE	Total Number Private and Municipal	Number Generating	Number Purchasing Energy	Hydro-Electric Plants in Whole or in Part	Number Having Day Service	Number of Municipal Lighting Systems	Number of Municipal Systems Purchasing Energy
Alabama	63	60	3	10	42	33	2
Alaska	12	12	0	7	10	0	0
Arizona	30	27	3	8	23	2	1
Arkansas	79	75	4	3	50	19	0
California	91	59	32	86	68	19	12
Colorado	60	47	13	28	47	11	1
Connecticut	39	30	9	17	33	3	1
Delaware	12	9	3	0	6	6	0
District of Columbia	2	1	1	0	2	0	0
Florida	84	78	6	3	49	25	1
Georgia	151	125	26	27	96	98	20
Hawaii	5	4	1	3	3	0	0
Idaho	37	28	9	42	24	7	3
Illinois	241	198	43	17	158	85	4
Indiana	197	148	49	12	139	71	17
Iowa	214	159	55	30	177	92	27
Kansas	248	202	46	12	186	142	33
Kentucky	99	92	7	2	51	23	2
Louisiana	63	59	4	0	45	29	0
Maine	85	68	17	70	57	3	0
Maryland	45	34	11	8	28	9	1
Massachusetts	123	72	51	29	100	37	21
Michigan	197	187	10	116	135	91	4
Minnesota	213	178	35	34	160	115	22
Mississippi	84	84	0	0	45	43	0
Missouri	235	209	26	6	140	72	5
Montana	54	49	5	26	31	6	0
Nebraska	225	192	33	35	154	123	22
Nevada	9	7	2	9	7	1	1
New Hampshire	53	43	10	40	34	3	0
New Jersey	60	49	11	8	46	14	2
New Mexico	27	27	0	5	20	4	0
New York	315	240	75	139	217	47	9
North Carolina	120	90	30	40	76	51	19
North Dakota	108	108	0	0	60	16	0
Ohio	284	225	59	21	179	121	23
Oklahoma	141	137	4	3	105	71	1
Oregon	57	54	3	49	53	10	0
Pennsylvania	243	187	56	50	183	41	4
Philippine Islands	4	4	0	0	3	0	0
Porto Rico	5	4	1	2	2	1	1
Rhode Island	11	5	6	2	10	2	2
South Carolina	75	68	7	30	41	31	5
South Dakota	102	98	4	5	70	30	1
Tennessee	90	80	10	25	52	28	2
Texas	243	226	17	13	181	22	4
Utah	30	26	4	47	22	15	1
Vermont	55	39	16	55	38	13	4
Virginia	82	76	6	33	44	19	1
Washington	86	65	21	62	65	13	8
West Virginia	61	51	10	8	40	5	0
Wisconsin	265	227	38	129	188	94	17
Wyoming	29	28	1	5	18	5	0
Total	5543	4650	893	1411	3813	1821	304

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Profit in Garbage-Fed Hogs

The Experience of Lansing, Mich., Shows That Proper Care Increases Revenues

By E. C. W. Schubel, D. V. S.
Superintendent, Garbage Department and Hog Farm, Lansing

THE question of garbage disposal has been a serious one for years, not only in Lansing, but in other cities as well. Various methods have been tried out. Burial of garbage was found too costly, and disposal by private concerns under contract has often failed. Not until the present system of disposal by feeding to hogs was inaugurated under municipal control did the garbage question begin to be less troublesome.

Important Points Regarding Methods

To begin with, every collection system should be municipally controlled. The method used in Lansing is the "can collection" system: the collector takes up the full can and leaves an empty one. This system is an advantage to the householders because they have no cans to wash, but is undesirable to the city from the standpoint of economy. It costs the city more than $1,500 a year to wash and disinfect the cans. Can collection has another disadvantage: a great many householders are very indiscreet in what they place in the garbage can. They put such articles as glass, broken crockery, floor sweepings and tin cans into the cans with the garbage. This cannot be detected until the cans are emptied at the disposal place.

Handling the can so often causes a rapid depreciation. Lansing is buying the cans at present from funds derived by making a rental charge of $1 per can per year. Many cans will not last a year. Freezing weather causes the greatest depreciation.

On account of the increase of requests for service since the close of the war and the increased activity in building operations, the equipment is so limited that only weekly collection is being given to the residential sections of the city, while daily collections are given to the restaurants, hotels, cafés, and other eating-places.

The Collection Equipment

The collection is made entirely with motor equipment. It includes one Duplex 4-wheel drive truck with a 3½-ton capacity, with a trailer of like capacity. When the truck is used for collection purposes it carries from 150 to 200 cans, but when used for transporting the cans of garbage from the city to the farm it will haul from 350 to 500 cans by using the trailer. This mode of transporting the garbage is used in winter or when the roads are impassable for the smaller trucks.

The equipment also includes two 1-ton Ford trucks, each with a capacity of 55 cans; two 2-ton Reo trucks, each with a capacity of 115 cans; and one 1-ton Republic with a capacity of 60 cans. To this equipment there will be added one or two more trucks during the coming year. On the Duplex truck, three men are used for collection; on the other trucks only two

A 2-TON MOTOR TRUCK USED FOR GARBAGE COLLECTION, LANSING, MICH.
The "stack" or flaring top can is used for garbage collection

men are used. At the present time the collection is being made with eleven men. The service is becoming more general, as those people living in the outskirts of the city are beginning to ask for service. It shows that people are being educated to want better sanitary conditions.

Financial Report on Lansing's System

The garbage from this city is fed to hogs. This method of disposal has been highly satisfactory, and very profitable considering the investment.

The idea of feeding the garbage to hogs was brought to realization by a number of our public-spirited citizens, including former Mayor J. G. Reutter, Alderman Lewis Neller, Alderman John McClellan, and ex-Alderman Frank Young, who backed the proposition with their money. After financial success was assured, they turned over to the city, on November 1, 1917, a herd of hogs numbering 213, valued at $4,000, and several buildings valued at $1000. Since that time additional buildings and equipment costing over $1,200 have been purchased, the herd has been increased to 400 hogs valued at over $12,000, and there is $5,000 in the treasury with which to buy more hogs. Building up the herd has been entirely dependent upon the profits derived from the sale of hogs.

A report compiled recently by the City Comptroller showed that on May 1, 1919, the project had made a profit of about $8,500. This was based on a price of about $18 per hundred pounds for the hogs, when in reality the hogs could have been sold for $20 per hundred pounds. If a sale had been made of all hogs on hand, the profit for the past fiscal year would have been more than $10,000.

As soon as the herd can be increased to 800 or 1,000 head and kept at about that number, the profit from feeding will be from $12,000 to $18,000, dependent, of course, upon a high price for hogs. There is every indication that for years the demand will be enormous from the European countries, as it will take those countries a long time to build up their herds. Cities boasting of other methods of disposal cannot show much greater profits when the investment is considered.

When a farm is purchased where the feeding may be done upon the ground, the uneaten portion of the garbage can be converted into fertilizer by plowing it under the soil and then sowing a crop on this ground. This will increase the profits from garbage disposal.

Methods of Feeding

The garbage is fed as it comes from the city directly to the hogs, upon the ground or upon cement platforms. Feeding upon the ground is preferable, as upon platforms a certain amount remains uneaten and so must be hauled away, while that which remains upon the ground uneaten may be plowed under.

The test of the practicability of the feeding method of disposal is the selling possibilities of the pork produced. There is no benefit in feeding if the pork is unfit for food or if a popular prejudice will prohibit it from selling freely. If garbage-fed pork is inferior to grain-fed, the price paid by the packers, who are naturally adverse to paying full price for an inferior product, should indicate the fact. When selling our hogs on the Detroit market they have always brought the top of the market.

I have never seen any market which discriminated against hogs fed upon garbage. When cases of "softer" pork have been noted, it has generally been found that the animals were improperly raised. There is no theoretical reason why garbage should be bad for hogs. Even putrefying materials may be transformed into delicious human food; for example, lobsters, crabs, shrimp, etc., feed almost exclusively on decaying fish, and the common barnyard chicken will eat and thrive on almost all kinds of so-called filth. In the eating of garbage-fed pork, one will find the meat much sweeter in taste than the corn-fed pork.

An objection often raised to garbage-fed hogs is that such hogs are likely to be infected with trichinosis or tuberculosis. There are no data available to support such claims; isolated cases have been found, as with grain-fed stock, but this is no evidence that garbage-fed hogs as a class are any more susceptible to either trichinosis or tuberculosis than grain-fed hogs.

About one hundred animals, ranging from pigs to big sows, will eat a ton of garbage per day. This means an average of 20 pounds per animal per day. In the early summer hogs make very good gains in weight. Under proper conditions they will gain from ½ to 1 pound, and even more, per day. A car-load marketed in Detroit in the middle of June gained a little more than 100 pounds from the middle of February to the 19th of June, or about 125 days. This time included some very bad weather for hogs.

Care of the Garbage

Householders should be required to keep garbage free from cans, papers, sawdust, oyster shells, glass, etc. In Lansing, garbage mixed with any of these foreign materials is refused collection, or the can is taken up and no service given. Numerous losses can be traced to such foreign matter, particularly to the finer particles that readily become embedded in edible materials. Two objects which find their way into the garbage can in considerable quantities are phonograph needles and the very thin glass from electric-light bulbs.

Undoubtedly a great deal of the difficulty with mixed material is due to carelessness, but the admixture of the objects mentioned

THIS PERMANENT WINTER HOG HOUSE, LANSING, MICH., IS 75 FEET LONG AND IS DIVIDED INTO THREE COMPARTMENTS

During the winter, the hogs which are the nearest being ready for market, are placed in these pens and fed from a concrete platform. This type of platform and runway prevents excessive exercise.

above could hardly be from that cause. If the householder could imagine the tortures suffered by the unfortunate animals when their intestines are punctured and torn by the sharp points of glass or needles, they would join the humane society and help the city in eliminating this nuisance.

There is no sorting of garbage done on our farm. All hogs have an opportunity to get some of the garbage from eating-places. Hogs make the most rapid gains on garbage coming from eating-places, as they have the greatest variety of refuse food.

In the winter, all the cans are placed in the boiler room, where they are thawed out before the garbage is placed upon the feeding platforms or upon the ground. Frozen garbage is unsafe to feed. At the farm we have always fed raw garbage in preference to cooked garbage. In the first place, a sterilizing apparatus could be installed only at considerable expense; secondly, cooking destroys a greater part of the food value of garbage. Sterilization of garbage destroys the opportunity for selection. Hogs will balance their own ration much better than man is able to do it for them. Cooking also incorporates objectionable matter with the edible garbage.

It is not necessary to supplement the feed of garbage with grain. It would not be economical, nor would there be any particular advantage gained in the quality of the pork or the price paid. Feeding small numbers in separate pens is preferable. There is no attempt to feed any particular breed of hog. The most losses have been among the white hogs, and the least among the red ones. Raising pigs for feeding upon garbage should be entirely divorced from that part of the farm devoted to feeding of garbage. Hogs should weigh at least 100 pounds before they are placed exclusively upon the feed of garbage. Most of the feeders are bought in the larger stock-yards, where a better selection can be made.

Causes of Losses

The feeding of garbage has its discouraging features as well as its advantages. Hog cholera used to be the cause of great losses among hogs feeding on garbage, but this can easily be prevented by the serum-simultaneous method of vaccination. No hogs are placed upon the farm until they have been treated with serum and virus. The greatest losses have been due to hemorrhagic septicemia, a form of contagious pneumonia which is usually brought into the herd thru the introduction of new stock from stock-yards, which generally are infected premises. This disease can be prevented to some extent by the use of bacterins. Other losses occur from salt poisoning, vegetable poisoning, ptomaine poisoning, and mineral poisoning. Some of the losses are due to the carelessness of the householder.

Unfavorable sanitary conditions have been the cause of losses; that is, the deep mud and filth in which hogs have to wade during the rainy season and while the ground is breaking up in the spring cause the hogs to become more susceptible to disease, especially to respiratory troubles.

Sandy soil which allows the escape of the water and keeps the feeding ground free from mud is the most desirable for feeding conditions. Hogs fed on sandy soil made such gains during last spring that they were ready for market about one month sooner than those fed upon the clay soil or upon the feeding platforms.

A Comparison

In summarizing, the following comparison of garbage-fed and grain-fed hogs may be made:

1. Garbage-fed hogs show a slightly greater shrinkage in long shipments than grain-fed hogs.

2. Garbage-fed hogs dress away very little more than grain-fed.

3. With proper management, the meat produced is equal to that of grain-fed hogs and cannot be distinguished from it.

4. Garbage-fed hogs are exposed to cholera constantly, so immunization is indispensable.

5. Cholera in garbage-fed hogs may be associated with secondary infections, but can be controlled by immunization.

6. Garbage-fed hogs are not peculiarly susceptible to trichinosis and tuberculosis.

Acknowledgment.—A paper read before the League of Michigan Municipalities.

Quarantine for Social Diseases

By Walter F. Meier

Corporation Counsel, Seattle, Wash.

WHILE for many years the need of municipal regulations for the control of social diseases has been recognized as a pressing one, the absolute necessity of such regulations became apparent when considered in connection with the efforts of the Government to raise an army of able-bodied men to fight in the war with Germany. Previous to this time it had been generally deemed sufficient for the law to condemn the practice of prostitution and to punish those who engaged in the traffic. The inefficiency of this remedy to secure for the Army and Navy men freedom from such diseases became known to the most casual observer of the conditions that manifested themselves in the vicinity of the cantonments and training stations established for the mobilization and training of these men.

In this connection the Federal authorities were demanding an efficient enforcement of existing statutes and municipal regulations with the hope of minimizing the danger of the infection of men already in, or about to be called into, the service. Some communities, when confronted with the actual conditions prevailing, and realizing the possible result of a lax enforcement of law, responded to the call; some were indifferent; and some went far beyond established precedents in their attempts to effectively control and eliminate such conditions. In this last-named class was the city of Seattle, Wash.

Seattle's Situation

Camp Lewis, one of the larger cantonments established by the United States for the mobilization and training of men for the National Army, is located about sixty miles from Seattle. On Saturday afternoons and Sundays large numbers of men, off on leave, would come to the city. Those in charge of the camp, and those whose particular duty it was to look after the moral welfare of the soldiers, thought that there was a lack of proper enforcement of law in the city, and for this reason caused an order to be promulgated forbidding men from the camp to visit the city. To secure a modification of this order, the city took immediate steps not only to satisfy the officials responsible for this order that there was a bona fide effort to enforce the provisions of existing laws, but also to enact additional legislation looking toward the segregation or quarantine of persons affected with venereal diseases.

In undertaking the latter means for combating the spread of these diseases, the city entered upon an untried field so far as having any legal precedents was concerned. By pursuing this course, however, it not only secured a modification of the order referred to, but it also furnished what appears to be the first decision of a court of last resort in which the right to quarantine for social diseases was upheld or, indeed, passed upon. Because of these facts, a short review of the legislation under which the quarantine for venereal diseases was accomplished, and the reasoning of the Court in sustaining the same, may be of some interest and profit to other localities.

State Board of Health Powers

The Washington state constitution contains a mandatory provision that "there shall be established by law a State Board of Health—with such powers as the Legislature may direct." Pursuant to the mandate, the Legislature has enacted the following provisions:

"The State Board of Health shall have supervision of all matters relating to the preservation of the life and health of the people of the state. The Board shall have supreme authority in matters of quarantine, and may declare and enforce it when none exists, may modify, relax or abolish it when it has been established. The Board may have special or standing orders or regulations for the prevention of the spread of contagious or infectious diseases. * * * It shall be the duty of all local boards of health, health authorities, and officials, officers of the state institutions, police officers, sheriffs, constables, and all other officers and employes of the state or any county, city or township thereof, to enforce such quarantine and sanitary rules and regulations as may be adopted by the State Board of Health, and in the event of failure or refusal on the part of any member of said boards or other officials, or persons in this section mentioned to so act, he or they shall be subject to a fine of not less than fifty dollars, upon first conviction, and upon conviction of second offense of not less than one hundred dollars."—Rem. Code, Sec. 5406.

"In case of the question arising as to whether or not any person is affected or is sick with a dangerous, contagious or infectious disease, the opinion of the health officer shall prevail until the State Board of Health can be notified, and then the opinion of the executive officer of the State Board of Health, or any member or physician he may appoint to examine such case, shall be final."—Rem. Code, Sec. 5546.

"The term 'dangerous, contagious or infectious diseases,' as used in this chapter, shall be construed and understood to mean such disease or diseases as the State Board of Health shall designate as contagious or infectious and dangerous to the public health."—Rem. Code, Sec. 5547.

Action Taken by State Board of Health

Under the powers granted by the foregoing provisions, the State Board of Health adopted rules and regulations defining syphilis, gonococcus and chancroid infection as "dangerous, contagious and infectious diseases," and prescribing the conditions under which persons afflicted therewith might be quarantined and released from quarantine. These rules and regulations, and the statutory provisions authorizing the same, were not complete in themselves, for they contemplated the exercise of a local power authorized by the state constitution and laws. The authority for this local exercise of power, and the manner of its exercise in this particular case, follow:

Section 11 of Article 11 of the state constitution contains the following provision:

"Any county, city, town, or township may make and enforce within its limits all such local police, sanitary, and other regulations as are not in conflict with the general laws."

Court Views as to Local Powers

Concerning this constitutional provision, the Supreme Court of the state, in the case of *Detamore v. Hindley,* (83 Wash. 322), has said:

"This is a direct delegation of the police power as ample within its limits as that possessed by the Legislature itself. It requires no legislative sanction for its exercise so long as the subject matter is local, and the regulation reasonable and consistent with the general laws."

In addition to the constitutional provision authorizing the exercise of a local police power, the Legislature expressly authorized any city of the first class:

"To erect and establish hospitals and pesthouses, and to control and regulate the same; to restrain and provide for the punishment of vagrants, mendicants, prostitutes, and other disorderly persons; to provide for the punishment of all disorderly conduct, and of all practices dangerous to public health or safety; and to make all regulations necessary for the preservation of public morality, health, peace, and good order within its limits; and to provide for the arrest, trial, and punishment of all persons charged with violating any of the ordinances of said city; but such punishment shall in no case exceed the punishment provided by the laws of the state for misdemeanors."

Seattle Adopts Ordinance

Pursuant to the authority to enact measures partaking of local police power, the city of Seattle made it the duty of its Health Commissioner to make an examination of persons taken into custody by the Police Department and suspected of being afflicted with any contagious or infectious disease, the ordinance reading as follows:

"Whereas, by reason of investigations made by the Sanitation Department and under its direction, the public welfare requires the examination of persons of both sexes taken into custody by the Police Department of the city for the purpose of preventing the spread of infectious and contagious diseases; now, therefore,

"Be it ordained by the city of Seattle as follows:

"Section 1. For the purpose of preventing the spread of contagious and infectious diseases or maladies, it shall be the duty of the Sanitation Department of the city of Seattle to duly examine in such manner and by such methods as modern science has found to be proper all persons who are taken into custody by the Police Department of the city who are suspected of being afflicted with any contagious or infectious disease or malady, and the Sanitation Department and the Commissioner of Health are hereby authorized and empowered, and it shall be their duty, to order any such persons so taken into custody to be examined for such purpose."

To meet the conditions expressly presented by the establishment of Camp Lewis and certain training stations in close proximity to the city, an existing health ordinance was amended by the enactment of the following provisions:

"Whenever it shall come to the knowledge of the Commissioner of Health of the city of Seattle that any adult therein has chickenpox, or any person therein has smallpox, variolοid, syphilis, gonorrhœa, or any other contagious or infectious disease of a similar or different kind from that herein specified, or any disease or sickness dangerous to the public health, said Commissioner is hereby authorized and empowered, and it shall be his duty, to forthwith, whenever in his judgment it is safe, expedient and practicable, cause such infected person to be removed to and kept in a hospital, sanitarium, a separate house, or such place as may be designated by the Commissioner of Health, or as may be by law or ordinance provided therefor, and cause said person to be properly treated and cared for, and to make such other rules and regulations as may be necessary or advisable for the protection of the public health; and in case, in the judgment of said Commissioner of Health, it is unsafe, inexpedient or impracticable to remove such person to such hospital, sanitarium, separate house, or such place as has been designated by the Commissioner of Health, or as may be by law or ordinance provided therefor, it shall be his duty to forthwith establish and enforce such quarantine or other regulations as are necessary for the protection of the public from such disease.

"It shall be unlawful for any adult infected with chicken-pox, or for any person infected with smallpox, yellow fever, Asiatic cholera, bubonic plague, syphilis, gonorrhea, or any other contagious, infectious or pestilential disease of a similar or different kind from those herein specified, who shall be removed by order of the Commissioner of Health to any hospital, sanitarium, separate house, quarantine station or place, to depart from or leave such hospital, sanitarium, separate house, quarantine station or place without permission of the Commissioner of Health so to do."

Quarantine Sustained

Pursuant to the foregoing provisions the Commissioner of Health inaugurated quarantine of persons who were placed under arrest and found to be afflicted with a venereal disease. Both men and women were subjected to quarantine. Because it constituted an innovation, many thought, having been so advised by counsel, that they were being deprived of their liberty "without due process of law." Innumerable writs of habeas corpus were sued out. Applications for writs, or returns thereto by the city, were heard before the various judges of the Superior and Federal Courts. Releases were denied in all these instances. Because of the singular unanimity with which the trial courts denied releases from the quarantine, one, whose application for such release had been summarily denied, sought a writ of mandate from the Supreme Court of the state to compel the trial court "to issue a writ of habeas corpus and to proceed with the hearing thereon." The Supreme Court denied this application on the ground that, the trial court not having refused to act, mandamus would not lie to determine what action the trial court should take. (State ex rel. Woods v. Mackintosh, 99 W. 553.)

This decision, however, did not settle the law as to the power of the local authorities to maintain the quarantine under the provisions above set forth, and persons subjected to such quarantine continued to seek release thru judicial proceedings. Finally, in one of such proceedings, the trial court undertook to appoint an independent commission of physicians to determine whether or not the applicant whom the local health officer had found to be afflicted with a venereal disease, which finding had been approved on appeal to the State Board of Health, was, in fact, so afflicted. Upon the refusal of the Commissioner of Health to permit this independent commission to make such examination, the court indicated an intention to punish him for contempt of court on account of such refusal, whereupon an application was made to the Supreme Court for a writ of prohibition to restrain the trial court from visiting such punishment upon the Commissioner. This application for a writ of prohibition was granted, as more fully appears from the opinion of the court in State ex rel. McBride v. Superior Court, 174 Pac. 973. The opinion of the court refers to the state and municipal legislation herein-above referred to, and fully sustains the quarantine provisions as a proper exercise of the police power.

Regarding the authority of the Legislature to invest the State Board of Health, an administrative board, with power to define and classify diseases, and in sustaining such authority, the court said:

"It is finally contended that the law is unconstitutional, in that it delegates legislative power to the health boards, in that it leaves to them definitions and classifications of diseases.

"This court has not heretofore considered similar laws as a delegation of legislative power or authority. The legislation is that of the legislative body, but it is not always practical to meet every phase of the necessity that has called for the law by the enactment of a general statute. The Legislature may well have taken notice of the fact that the nature, virulency, and extent of territory covered by contagious and infectious diseases, whether endemic or epidemic, are all factors to be considered in the matter of quarantine, and that, after all, the whole working plan for quarantine must depend upon the judgment and discretion of men learned in the science of medicine, and that doctors sometimes disagree. The Legislature, as well as the courts, would be helpless in such matters without resort to expert opinion, and their judgments would necessarily lie in greater or less degree in the facility of witnesses and the skill of counsel. It is most likely that the Legislature sought to avoid the confusions and delays that must necessarily follow if arbitrary classifications were attempted in the statute."

The opinion concludes with the following significant language:

"Finally, we hold that it is within the power of the Legislature, in dealing with the problems of public health, to make the determination of a fact by a properly constituted health officer final and binding upon the public as well as upon the courts."

Importance of the Decision

The facts underlying this decision render it an important one, and the decision itself is unique in that it appears to be the only reported decision sustaining the right to segregate and quarantine persons afflicted with venereal diseases. Notwithstanding the passing of the emergency that gave rise to its inauguration, this method of dealing with a condition that has in the past appeared to be an almost ineradicable evil in human society may point a way which will tend, at least, to a minimizing of its effect.

"The best defense against the venereal diseases is an offensive strong enough to wipe them out."—Connecticut Health Bulletin.

12½% Raise Suggested for City Employes

City of Seattle,
Office of the Mayor.
July 22, 1919.

TO THE EDITOR OF THE AMERICAN CITY:

You ask me for a statement as to what action I have taken in regard to increasing the pay of city employes.

This year's budget, taking effect January 1, was made in July, 1918. Between the time of its making and the time of its taking effect, the cost of living rose so rapidly that in October last year it was necessary to increase the pay of all city employes. Since that time there have been no further increases, and in the course of ordinary events no further increases under our budget system would have taken place until January, 1920. However, I felt that the cost of living was continually going up, and I therefore took it upon myself to make an investigation. I investigated far enough to learn that the average pay of our city employes was not commensurate with the present-day cost of living, and I asked our Board of Public Works to make a thoro and searching investigation and report their findings and recommendations to the City Council. This the Board of Public Works did, and two weeks ago recommended to the City Council that an immediate increase in pay of 12½ per cent be given to all city employes.

All cities want efficiency in the work of their employes, but such efficiency cannot be gained unless employes receive a fair and just remuneration for their services. I do not consider that it is fair to the employes to compel them to wait for their raise until the time set by law. If the cost of living continues to increase, I believe deficit ordinances should be passed to meet such increase, as you cannot have efficiency if your employes are underpaid.

Respectfully yours,
OLE HANSEN,
Mayor.

NOTE: Since writing the above, Mayor Hansen has resigned, but that does not lessen the force of his argument for adjustments in municipal payrolls.

Municipal Forestry in Pittsfield, Mass.

White Pines are Recommended Despite the Blister Rust

By John B. Woods

Valuation Engineer, Treasury Department; former Assistant Forester and Field Agent for Western Massachnsetts

WE all know that trees are one of the most useful and satisfying gifts of Mother Nature, and also that under modern conditions the much-abused Dame cannot always regenerate forests in the place of old ones which have been cut down. The National Forest Service performs a great and indispensable public task in administering the reserved lands set aside by foresighted men in the past, and in carrying on broad-gage educational propaganda and practical research along many lines. There are several progressive state departments, all doing the best their political and financial situations will allow to foster conservation and reforestation. Many wealthy citizens, owners of large estates, are also carrying on, with varying degrees of intelligence and success, their own plans for the future welfare of their forest lands. But, after all, one of the greatest opportunities for results that shall be daily visible to thousands of men and women is in the cities of this country.

Many cities in Europe have for many decades owned their own forests and managed them both as public recreation plants and as money-making woodlots. Of course there are exceptions; some cities do not own forests except such parks as lie within the limits of duly incorporated streets. But even such wooded areas are veritable forests in comparison with our tiny breathing spaces which we dub "parks," and they are not dotted with "Keep Off the Grass" signs except in rare cases. There are good reasons for our own lack of city forests, of course. However, the object of this sketch is neither to criticise further nor to justify our shortcomings, but to indicate briefly what one city has done and is doing to-day in the way of acquiring a stand of timber for posterity. And the most gratifying feature of this enterprise is that it has come thru to a fair measure of success without the expenditure of much money from the city treasury.

Perhaps the best way to describe the hill city of Pittsfield, seat of Berkshire County in Massachusetts, is by the simple statement that there are within the corporation limits more than a million dollars' worth of shade trees. The city also possesses a splendid water-supply, with a contributing watershed of about 3,000 acres along the northern and eastern ridges of October Mountain, some four miles or more from town. A dozen years or so ago the Board of Public Works built a reservoir of several acres half-way up the mountain, and in 1912 completed a second and much larger reservoir farther up the slope, with a concrete spillway and a rock-walled stream which feeds

FARNHAM DAM, UPPER RESERVOIR, PITTSFIELD, MASS., WHICH IMPOUNDS THE WATERS FROM THE REFORESTED WATERSHED the lower reservoir. The two projects are splendid works of engineering in themselves, constituting a fitting monument to city progressiveness. The watershed which feeds them is partially covered with old-growth pine and hardwood and partially composed of old cuttings and farm lands, which year by year are growing up to young white pines, artificially planted. Thus the forestry idea has found its way into the water-supply situation and is being used to improve the watershed both in appearance and in usefulness.

A Forestry Committee Appointed

Always there are needed men who have both convictions and influence to put new ideas into motion toward results. The men in this particular case were two, K. B. Miller, the manager of the Pittsfield *Eagle*, and A. K. Sloper, a successful insurance man. They examined their convictions until they were satisfied that nothing was wrong with them, and then they tackled the proposition of getting the people of the city, represented by the governing body, to take an active interest in this widely talked of but little practiced business of forestry. As both were bound to see this forestry idea applied to the improvement of the watershed up on the mountain, it was but natural that in the course of a few months a committee consisting of these two was chosen by the City Council. Their financial ammunition consisted of $800 for the first year.

Starting a Pine Nursery

The State Forester advised them to buy pine seeds and establish a small nursery in order to obtain the stock for planting, so with the coöperation of the caretaker of the reservoir property they broke ground. The seeds germinated with a remarkably high percentage of vitality, and in a short time the nursery was filled with young seedlings. Then they began to die—"damping off," as the nurseryman expresses it. For a while the enterprise was threatened with complete failure, and the two men felt that they were in duty bound to pay back to the treasury from their own pockets the $500 which had been invested. They could not quit, however, without trying every remedy known, so they kept on doctoring the nursery soil with sand. Finally, after the seedlings had been handled and transplanted so often that they were all but known by name, the damping stopped and affairs took an upward trend. Since that time a third of a million transplants have been taken from the beds for planting, and an equal number are still available for use.

Combating the White Pine Blister Rust

During the last few years there has been a great deal of agitation about the ravages of the white pine blister rust thruout the eastern states. Many foresters have gone on record with the statement that white pine should not be planted in this region. Doubtless there are spots where the blister rust has ruined whole pine forests, and without doubt it will continue to be a menace as long as garden currants and gooseberries are grown in close proximity to pine plantations and so long as the wild varieties of the Ribes family are allowed to flourish in the open lands. For, as is well known, the disease is one which alternates between the berry plant and the pine tree, needing one as much as the other to carry on its life cycle of mischief. The simplest method of combating the plague, therefore, is to remove all currants and gooseberries from the vicinity of pine plantations. The Forestry Department of Massachusetts does not advise the elimination of white pine from the list of species favorable for reforestation work, for the white pine is at its best in this southern New England country, growing rapidly and offering probably the greatest opportunity for really profitable forestry work.

The attitude of the committee on reforestation at Pittsfield is well illustrated by its experience at Washington in 1917. Mr. Miller and Mr. Sloper attended the forestry meeting at the national capital that year, and during the course of the lectures a chart of the white pine blister rust was placed on exhibition. Berkshire County was heavily shaded with black, indicating that it was a veritable hot-bed of rust and ruination. The trend of the talk was all toward changing from white to red pine in these afflicted localities. Finally Mr. Sloper expressed himself.

"Out yonder," said he, "we have a submarine menace which is mighty discouraging. The Germans are sinking our ships along with those of every other self-

REFORESTING THE WATERSHED THAT FURNISHES COLORADO SPRINGS WITH ITS ABUNDANT SUPPLY

respecting nation, and they are getting hundreds of them. But we are not talking about shutting down our shipyards. Rather we are speeding them up to the limit. And we are going to build ships faster than the devils can sink them, taking all the precautions we can, of course, to keep them from getting more. And up in our county we have had during the past summer the worst experience on record with infantile paralysis. Our little folks have been dropping off at a terrifying rate. But we are not going to stop trying to raise children up there. We'll take every measure that the doctors can devise to keep the disease away from the kiddies. And that's what we propose to do with our white pine. Maybe the rust is bad, altho really the facts do not bear out the cross-hatching on that chart. But, anyway, the white pine is our best bet as a timber tree for the future, and we're going to plant every one that we can raise in the nursery, and then we'll go after the Ribes submarine bases and clean them out."

Other Forestry Problems

Of course the tree planting game is not all smooth play. There is the problem of the nursery, unless one desires to buy planting stock, which is a good plan for small enterprises, altho expensive. After the seedlings have come up and attained a year's growth they begin to crowd each other. Then one must transplant them to other beds, allowing space enough for them to continue their normal rate of growth. In these beds they develop to the age of three or four years, and then they must be used for planting if ever they are going to be used, for they soon become really large and unsuitable for economical handling. In the nursery, then, a reliable and interested man is needed. When the time comes for planting out in the open there is the question of labor, for the ordinary thoughtless laborer is no man to plant trees. The work is not difficult either physically or mentally, but it does call for patience and interest in order that each little tree shall be placed in the ground firmly and given a chance to live. The cost of putting three-year-old transplants in the ground should not exceed $8 per thousand even in hard and rough ground, and a thousand trees will replant an acre of land.

For a year or two after reforestation a project may keep its best friends in a state of anxiety, for often the trees are lazy about beginning to grow. Then occasionally a deer steps daintily thru the fields and bites off the tender top shoots of the pine. But if given a fair chance thru proper planting, they will come along after a year or two, and after five years they are surprisingly tall. From ten inches to ten feet in ten years is not at all uncommon height growth. Fire, of course, is a menace, but that is one more argument in favor of municipal forest cul-

PLACING THE TRANSPLANT IN A NATIONAL FOREST

ture. Since cities maintain close fire protection as a rule wherever they have timbered watersheds or reservoirs of any kind, they can take advantage of conditions which the lumberman must make for himself at great expense if he desires to reforest his cut-over lands. In fact, the fire danger is the one chief reason why lumber concerns do not spend more money in tree planting.

Transplanting the Trees

To return to the experiences of the committee in Pittsfield: The first two years were spent in making the nursery a "going" institution, and then began the actual planting. A yearly appropriation of $800 was secured for the work, and the first planting, done about the upper or so-called farm reservoir, consisted of putting 25,000 two-year-olds into the grass- and bush-grown hillside. The next year, and also the year after that, an equal number went into the ground. Then the figure jumped to 70,000, which showed that the enterprise was becoming stronger. In spite of our war-time difficulties of labor and the like, the year 1918 saw 75,000 trees planted about the lower reservoir, and this last spring the highest mark has been reached, 85,000 pines and spruces having been put in. This year the annual appropriation has been increased from $800 to $1,000.

Costs

Six hundred thousand seedlings of white pine, and a few spruce, grown from seed to ages of two and three years, represent a fair investment. If bought from the State Forestry Department they would have cost, at the three-year stage, $4,800, which is about one-half of what they would have cost if secured from commercial forest nurseries. In addition, the Pittsfield enterprise has on hand about $500 worth of frames and other nursery paraphernalia. Furthermore, there are planted upon the upper slopes of October Mountain, about the reservoirs, more than 300,000 trees. The total expenditure of public moneys will be, at the end of the current year, $6,600. Allowing that it costs as much to raise a tree to the planting stage as it does to plant it for future forests—which is a fair estimate, inasmuch as the stock costs the same when bought from the state as the cost of planting—we find that the planting on the hillsides has cost $2,200, or less than $7 per thousand. As the stand is about 1,000 trees to the acre, the same figure can be used on the acreage basis. The 600,000 plants in the nursery have cost, then, $4,400, less the inventory of plant equipment of $500, or $3,900, net. Of course, one-half of these trees are planted and the cost on them is a past expense, while the other half still on hand remain to be dug out and prepared for shipment to the field; but as there is money enough still unspent to do this work, our computations need not suffer from such a consideration. So the cost of raising the stock is about $6.50 per thousand. No one can complain that the money spent upon October Mountain has been wasted.

The Pittsfield Plan Worth Copying

All things considered, the Pittsfield enterprise has been proved a success. The cost has been low; and when one considers that after forty years the white pine stands may well be worth $200 at the very least—and most lumbermen predict that the next forty years will nearly double the value of standing timber—he cannot but feel that tree planting is a sensible business for any-one owning productive, well-protected land.

FORWARD STEPS
REPORTED TO THE AMERICAN CITY BY MUNICIPAL OFFICIALS & DEPARTMENT HEADS

WATER DEPARTMENTS

Efficient Equipment Keeps Down Costs

TOLEDO, OHIO.—The city of Toledo is just beginning to derive full benefit from the very efficient water-works equipment which it has been installing during the last three years. This up-to-date equipment has in a large measure been responsible for offsetting the increased labor and material charges. No attempt has been made to do without equipment or supplies which were necessary for the operation of the plant; and, in fact, both financially and as regards the physical elements of the equipment, it is the belief of those who have studied the conditions carefully that the Toledo water-works are in better shape to-day than at any time in the past ten years.

The receipts for the year 1918 increased slightly in excess of 4 per cent, while the total disbursements were 2 per cent less than those of the previous year. The cost of operation and maintenance increased only 3.3 per cent during the year in spite of the fact that 5.48 per cent more water was furnished than in 1917. Comparative labor and material costs have been very carefully investigated, and it has been found that labor costs for operation and maintenance have increased approximately 10 per cent, while the cost of materials increased nearly 60 per cent over 1917. In spite of these increases in cost, we were able to keep the expense of operation down to an increase of only 3.3 per cent.

The filtration plant has been completely overhauled and put in first-class condition, reliable machinery for handling chemicals has been installed, and additional pumping capacity is now being provided for the Broadway pumping station. By March 1, 1920, this station will be completely over-

INTERIOR VIEW OF FILTER HOUSE, TOLEDO, OHIO, WATER-WORKS hauled and will then be large enough to permanently house pumping equipment sufficient to provide for a water consumption twice as large as the present requirements.

All of this improvement work has been paid for from the earnings of the Division of Water without issuing additional bonds, and, in fact, not only has the interest on the bonded indebtedness of the Department been met, but the indebtedness itself has been reduced during the year by $60,000.

The figures given above are very interesting, in the light of the almost unanimous demand thruout the country on the part of privately owned public utilities for increase in revenue under the guise, "war prices" or "patriotic necessities."

In an effort to account for all the water pumped from the Broadway pumping station, a water-waste survey was carried on thruout 1918 in an endeavor to locate all leaks thruout the entire city, to determine the condition of the water mains and their appurtenances, to locate all water waste, and, if possible, reduce the pumpage of water for which no revenue is secured. From the results already obtained, it is believed that the consumption of water thruout the entire city may possibly be reduced from 5 to 10 per cent. If this can be accomplished, a large saving in the operating cost of the department will be effected, and at the same time a complete and accurate record of the entire water system and its conditions will have been obtained.

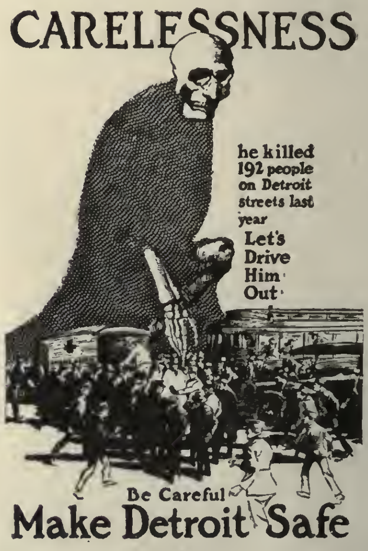
DAVID H. GOODWILLIE,
Acting Water Commissioner.

• POLICE • DEPARTMENTS

Safety First Campaign Reduces Loss of Life by Half

Detroit, Mich.—The Detroit Safety First Campaign was conducted by the Police Department, the Detroit Automobile Club, the local branch of the National Safety Council, assisted by several hundred organizations, including the "Four Minute Speakers," social and business clubs, improvement associations, Detroit Federation of Women's Clubs, the different churches, the Boy Scouts, American Red Cross, Y. M. C. A., and the various city departments. The thousands of members of industrial, commercial, civic and social organizations and activities feel that they have been more than compensated for all their efforts and expense by making a success of the campaign of saving lives thru accident prevention, and are all determined to keep up the good work in coöperation with the Police Department.

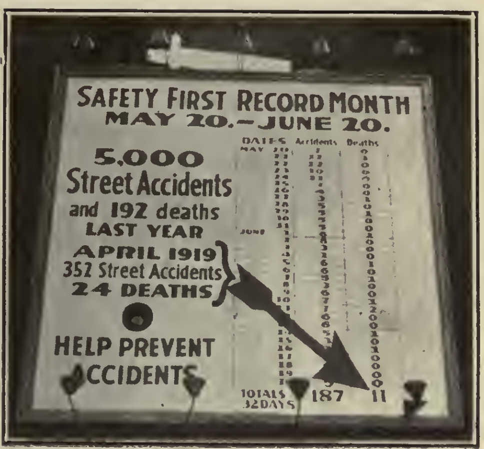
The campaign was a comprehensive one. Upwards of two million advertising articles were distributed. These included pictorial illustrations showing how accidents occur—chiefly those where children are the victims—and included also the big poster which merchants were good enough to keep in their windows. One million cards containing a reproduction of the large poster on "Carelessness" and an appeal from Police Commissioner J. W. Inches, M. D., were distributed to the factory workers. Half a million "Safety First" buttons also were distributed and there was such a demand for them that several hundred thousand more could have been used. While all pictures were posed, yet they were exact reproductions of what the writer and the photographer saw while on the way to get a picture of 57 children at one of the public schools for the purpose of visualizing the exact number of the little ones who were killed in Detroit streets



SAFETY FIRST POSTER, DETROIT, MICH.

last year. This fact is described in the pictorial folder, 500,000 copies of which were distributed to school children and others during the campaign. The pictures showing the damaged automobile were also posed to represent the exact manner in which a couple of accidents had just previously occurred. The signboard on the front of the City Hall was illuminated and a daily record was made on it of the number of accidents occurring and the number of deaths.

The ringing of bells comprised an impressive phase of the campaign. Whenever a fatality occurred thru street accident a large bell in the City Hall tolled and all the bells in the school houses, fire station, and one of the centrally located churches sounded 8 gongs at intervals of 18 seconds. This was done at 11:30 A. M. and 3:30 P. M., covering the 24-hour period, but they were not rung unless a fatality occurred. Just before the bells were rung the occasion was used in the schools by the teachers to give appropriate short talks. In order to avoid having any sensitive child fearful that some member of its own family was the victim, the chief details of the accident, including the name of the victim, were told to the children. The success of this ceremony was admitted on every hand. Upwards of 22,000 talks on "Safety First" were given by the teachers in the public schools and a police officer also gave daily talks to school children in coöperation with the school board.



ACCIDENT RECORD ON CITY HALL, DETROIT, MICH., DURING SAFETY CAMPAIGN

RE-ENACTING A FATAL ACCIDENT, SAFETY FIRST CAMPAIGN, DETROIT, MICH.

Entertainments and talks on "Safety First" were given every night at the Liberty Forum, located in the heart of the city, the feature of these entertainments being the showing of the "Safety First" film vividly picturing the dangers of the streets. Nine copies of this film were circulated in motion picture theatres thruout the city and shown daily.

Twenty-five thousand leaflets on "Safety First" were dropped from army aeroplanes over Detroit, 200,000 window cards were distributed and hung in the windows of residences thruout the city; 25,000 of the large posters entitled "Carelessness" were displayed at factories on billboards and other public display places; many thousands of the stickers entitled "Safer Streets" were displayed on automobile windshields; 1,000 "Safety First" oilcloth banners entitled "We are helping to make Detroit's Streets Safe" were carried on private and public vehicles; and "Safety First" posters and signs were displayed at the approach to all boatline docks and on ferry and pleasure boats. A fire department truck and police patrols toured the city daily, displaying large "Safety First" banners.

"Safety First" parades were held daily at noon with the following participating: Mounted Police, Police Drum and Bugle Corps, Patrol and Fire Department Apparatus with "Safety First" banners on frames, members of the "Safety First" Committee, and bands from various industrial plants.

A memorial tablet, giving the names, etc., of the persons killed in street traffic accidents during the period of the campaign, was erected on the front of the City Hall the last day of the campaign. Mayor James Couzens presided at the ceremony and two police buglers sounded taps from the City Hall steps. A clergyman was also engaged for the occasion to give an address on "Safety First."

During the month of April, just before the campaign started, street accidents caused 25 deaths and 352 injuries, whereas during the 32 days of the campaign there were only 187 accidents and 11 deaths.

The Safety First Committee and its friends are confident that the warnings so earnestly expressed during the campaign, both in the press and in talks, will continue always to be beneficial; that the campaign will prevent accidents, and that it will save children and others from injury and death. Observers say that no public proposition in recent years has received greater publicity than the "Safety First" campaign received. It has been a revelation, showing coöperation on the part of countless thousands of people to such an enormous extent that the reckless driver and the careless pedestrian must feel that they comprise an extremely small minority.

The Michigan Legislature, at its last session, passed a drivers' licensing law, under which the driver of every motor vehicle in Michigan must be licensed.

As a part of the Safety First campaign, from Monday, July 21, until August 2, police officers were stationed at 50 public schools, where they issued applications for licenses to operate motor vehicles in this state and conducted an examination of all applicants. The Department took this opportunity to emphasize the important safety rules of the street and to appeal to the public to coöperate in the efforts that are being made to cut at least in half the present annual record of 200 street traffic fatalities in Detroit. On the back of the application form is a copy of the law which provides for the suspension of a license after conviction for any one of three violations, namely:

Reckless driving
Driving while under the influence of liquor or drugs
Leaving the scene of an accident without giving name and address

Subsequent to the printing of this law, at a special session of the legislature, the minimum age was fixed at 14 years, which is in conflict with the common sense of the legislatures of all the other states and which was done by the rural representatives altho vigorously opposed by Detroiters.

GEORGE A. WALTERS,
Deputy Commissioner.

RECREATION - - DEPARTMENTS

Junior City Government Meets Regularly in City Hall

Newport, R. I.—The charter of the junior government states its object as follows: "To promote activities which shall occupy the leisure time of junior residents of Newport in such a way as to be of the greatest benefit to themselves and the city; to promote and assist in the regulation of athletics, games and physical training; to assist in the orderly conduct of playgrounds, school grounds, parks and recreation centers and to render every possible aid to the city government in enforcing the observance of the ordinances, especially on the part of its junior residents."

In order that the juniors may appreciate some of the problems which are confronting the seniors, city officials have explained their departments to the junior council. The junior officials and voters have made visits to the various industries of the city, the banks, factories and wholesale houses, receiving the chance to see their elders at work when they are at their best. The seniors, too, are beginning to see some of the problems which confront the youngsters. The juniors challenged the seniors to a baseball game. One has been played and three more are scheduled. The receipts will go to the junior treasury. They have the taxing power but have not yet exercised it.

The police force is organized as a Junior Guard under military discipline and drill; its members pledge themselves to observe the laws of chivalry; to be brave, trustworthy, honest, loyal and obedient; to be friendly and cheerful and to protect those weaker than themselves; to have respect for property and to protect it. Each guard is under the command of an adult Advisor, who drills them and to whom each guards-

JUNIOR MAYOR ADMINISTERING THE OATH OF OFFICE, NEWPORT, R. I.

man reports himself when he violates his pledge. The Junior Mayor is commander-in-chief of the guard when they march in formation, and appoints a chief to act as his executive officer. The latter has the duties of chief of police. We have several returned A. E. F. officers who act as advisors; among these are Lieut. Wm. P. Sheffield, Jr., and Lieut. Wm. R. Peckham. The junior guard see that the laws and ordinances of the junior city government are enforced. Rules of safety, fire prevention, rules against cigarette smoking, etc., are among the ordinances.

There is a judiciary department with a grand jury, judges, prosecuting attorney, etc.

The success of the junior government is due in large measure to the Advisory Board, of which Mayor J. P. Mahoney is chairman, and which numbers among its other members H. W. Lull, Superintendent of Schools, J. J. Conron, Manager of Armour Co., H. A. Titus, furniture dealer, three lawyers,—Wm. R. Harvey, Lieut. Wm. P. Sheffield, Jr., and Lieut. Wm. R. Peckham,—Dr. Norman MacLeod, and E. V. Murphy and T. J. Williams, of the Naval Training Station. The fact that these very busy men are interested enough to spend their time on the project makes the youngsters think seriously of the matter. Without the cooperation of the school teachers it would be impossible to achieve results.

Boys from all parts of the city register, those who attend school registering in their schools. They elect one councilman for every ten registered voters. These councilmen meet in city hall and elect the city officers and the board of aldermen. Meetings of the council are held twice a month and meetings of the aldermen every week. They meet in the City Hall, transact business, and learn to speak in public. We have a joint debate scheduled between the senior and the junior government.

Now that the Susan B. Anthony amendment has passed Congress, suffrage will be extended to the girls or they will have a junior government of their own.

ARTHUR LELAND,
Superintendent of Recreation.

Another Reason for Daylight Saving

SACRAMENTO, CALIF.—Made possible by the daylight saving plan, twilight concerts on Sunday evenings are becoming highly popular as a part of Sacramento's recreational and social life. These concerts, varied in character from week to week, begin at 7:30 P. M. and continue thru the twilight hours, being held in an open-air pavilion in one of the city's parks. The programs are arranged by the City Playground Department and the concerts given under the supervision and direction of this department.

Virtually the only expense to the city for conducting the concerts is in the printing of programs. Sacramento musicians, vocal and instrumental, are very generous in volunteering their services, and besides providing much enjoyment for the public, the concerts have been the means of bringing out local talent in a surprising degree.

On one Sunday the Chamber of Commerce quartet was featured; on the next, a talented vocalist and violinist of the city, then the United States railroad administration band, and so on.

In conjunction, there is community singing at the close of the concerts, conducted by a representative of the War Camp Community Service. The attendance at the concerts has never been below 4,000 and the mighty chorus arising from this mass of singers is most gratifying and impressive.

GEORGE SIM,
Superintendent of Playgrounds.

PUBLIC WELFARE - AND SERVICE -

Public Markets a Success in Columbus

Columbus, Ohio.—The city of Columbus has four market houses. The stalls and stands are leased once a year to the dealers in the market at a rental fixed each year by the City Council. The rental is so reasonable that the dealer has very few overhead charges to meet; consequently he can do business on a smaller margin.

We have always adhered to the principle that for every dollar expended for the improvement and up-keep of the markets the city should get full value. We aim to keep the markets in a sanitary condition, and to give the public the best of service at the least cost possible. Economy is ever our watchword, but at the same time we see to it that the public is not inconvenienced or suffering from inattention by tenants or market officials.

Columbus is a city of approximately 250,000 people, and the markets are visited by about 125,000 people per week. Some come as often as four times a week, and the rich as well as the poor are found at the stalls, buying the necessaries of life. They come in automobiles, in street cars and on foot, all of them bent on getting choice meats, vegetables and fruits at the lowest prices. The total number of tenants and helpers in the four different market houses is about 2,000.

The present Central Market House was built in 1848. The city contemplates building a new market house on the present site, by buying additional ground with accommodations for 600 stalls and stands. This would increase the city's revenue from tenants about $40,000 per year.

The total receipts of rentals of the city-owned markets for the last seven years have been $247,341.42. After paying all operating expenses, repair of buildings, insurance, etc., the net total profit to the city in the last seven years has been $111,527.96, an average of $15,932.56 per year.

CHARLES E. REINHARD,
Superintendent of City Markets.

ONE OF FOUR PROFITABLE MUNICIPAL MARKET HOUSES, COLUMBUS, OHIO

Legal Responsibility for a Pure Water-Supply

By John Wilson

Consulting Engineer, Duluth, Minn.

EDITORIAL NOTE.—*The writer is specially qualified to discuss this subject, as he was closely associated with the litigation following the typhoid epidemic at Mankato, Minn., in 1908.*

THE history of Mankato's water-supply as secured from a few of the old settlers is interesting. Some of the early officials were of the opinion that subterranean caverns existed and these were filled with water under great pressure. Now, if the crust overlying these caverns could be punctured, the water would, of course, spout forth. In fact, it was only a matter of drilling deep enough before one such cavern would be encountered.

The first experiment was tried in 1874 and 1875 at a cost of $12,000. A well was drilled on the hilltop to a depth of 2,204 feet, the elevation being selected in order to eliminate pumping and at the same time to secure fire pressure in the mains.

So firmly was the cavern idea fixed in the minds of these settlers that they even found evidence of the existence of the caverns while drilling. In their report on the well, they said: "At 1,160 feet the drill fell a little and water rose 10 feet higher; at 1,975 feet the drill again dropped and the water rose another 10 feet."

The drilling of this well did, however, reveal the fact that artesian water could be secured by drilling at the foot of the hill instead of at the top. But here the cavern idea again came up; these caverns would in time become empty, and the city would be obliged to look elsewhere for water. For this reason it was decided to locate the pumping station on the river bank. Just how it happened that the location selected was at the outlet of the main sewer I was never able to ascertain, except that ground could possibly be secured here at small cost.

How Pollution Was Made Easy

Previous to 1908, four wells had been drilled. These wells developed a pressure of from 10 to 12 pounds per square inch at the ground surface, and the discharge flowed by gravity to the pump. The pump was located in the basement several feet below the ground surface.

The character of the water was such that the well casing did not last very long. It was much less trouble to fix up by-passes and to waste water than to repair wells. The main sewer passed within a few feet of the well and just in front of the pumping station; accordingly, a connection was made with the sewer and the suction main, so that as soon as the pump was stopped the wells would flow into the sewer.

It was later decided to discharge the ashes into the river by flushing, and another pipe was laid connecting the pumping station and river. This pipe being at a lower grade than that between the suction main and the sewer, the waste from the wells flowed direct to the river. The Minnesota River at times reaches a very high stage and has on several occasions flooded the basements in the business section of the city.

In order to safeguard against backing up the sewage, a sluice gate was placed in the sewer, and a 5-inch centrifugal pump was installed to take care of the discharge of a 36 x 54-inch brick sewer of the combined type. In order to complete conditions favorable for polluting the water, a small brick cistern was constructed around the casing of one of the wells, and an overflow was laid to the sewer just below the sluice gate.

Now, note what happened. The river reached a very high stage and began to back up the sewer. There was a heavy rain; nevertheless, the sluice gate on the sewer was closed, the ash discharge pipe plugged, and the 5-inch pump started up. There was no record of the 18-inch connection between the sewer and the pump suction, and the men in charge did not know that such a thing existed.

The surplus sewage over what the little pump could care for had but one outlet—that was back thru the suction main into the cistern, around the well, and then thru its overflow to the lower side of the sluice gate. Thus a mixture of sewage and water was discharged into the mains and passed on to the consumers.

A Serious Legal Situation

This pollution resulted in between 4,000 and 6,000 cases of diarrhea, 417 cases of typhoid and 35 deaths. The city officials realized the seriousness of the legal situation confronting them, and engaged the best legal talent available to assist the City Attorney; if the city should be held liable, the resulting claims might amount to as much as $10,000,000, while the total valuation of the city was but $4,000,000.

Fortunately for the city, the facts connected with the infection of the water were not generally known; a number of explanations had been offered, but most of them were quite wide of the mark. The uncertainties connected with the case made the majority of people very slow to start legal proceedings. There were, however, two cases started, and many citizens waited to see how these fared in the courts before taking similar action. In the meantime, the city's legal advisers adopted every possible means of delaying proceedings, hoping in this way to postpone a decision until the period of limitation had expired, for, as one of the attorneys said, "If the facts ever get before a jury we stand no show whatever."

It had long been admitted that private corporations are responsible for the character of the water furnished by them to cities; but the general theory is that a municipality is exempt or immune from liabilities unless the statutes specifically state to the contrary.

The city demurred on the ground that it was exercising a governmental function and was not engaged in a commercial enterprise, and was therefore exempt from all liability. The District Court held for the city; the case was taken to the Supreme Court, which reversed the decision of the District Court. The city then asked that the case be opened for re-argument, which petition was denied. In the meantime, the period of limitation had expired. The city, therefore, settled the two cases, thus ending the litigation without trial on their merits.

As to the general rule of immunity, the Supreme Court said:

> "Defendant's argument would have had much more weight if it had referred the Court to a single case in which, under like circumstances, the rule of immunity had applied. This defendant has failed to do, and, for the perfectly good and natural reason that there is no such authority. Certainly Hughes vs. Auburn, 161 N. Y. 96 * * * to which defendant now calls our attention, is not an authority; to the contrary, this case did not involve liability in the conduct of waterworks at all. The cases concerning the inadequacy of water-supply for fire departments, it is perfectly obvious, involve essentially different circumstances from those by the case at bar." (Keever vs. City of Mankato, 113 Minnesota Reports, 55, 67.)

As to the city's exercising a governmental function in operating a waterworks, the Courts quoted from the dissenting opinion of Judge Elliott in a case where East Grand Forks sought to collect the water bills of a tenant from the owner of the property:

> "When the municipality enters the field of ordinary private business, it does not exercise governmental powers. Its purpose is not to govern the inhabitants, but to make for them and itself private benefit. As far as the nature of powers exercised is concerned, it is immaterial whether the city owns the plant and sells the water, or contracts for a private corporation to supply the water. It is not in either case exercising a municipal function. * * * When a municipality engages in a private enterprise for profit, it should have the same right and be subject to the same liabilities as a private corporation or individuals." (City of East Grand Forks vs. Luck, 97 Minnesota Reports, 373, 377.)

The Court said further:

> "It is obvious that a sound policy holds a city to a high degree of faithfulness in providing an adequate supply of pure water. Nor does it appear why its citizens should be deprived of the stimulating effects of the fear of liability on the energy and care of its officials; nor why a city should be exempt from liability while a private corporation under the same circumstances should be held responsible for its conduct and made to contribute to the innocent persons it may have damaged." (Mankato Case, supra, p. 62.)

In denying the application for re-argument, the Court made the following statement:

> "The decision rested in effect upon this supreme consideration, namely, that public policy

requires the conservation of human life, the preservation of public health and the establishment of public sanitation on a firm and certain basis in the law." (p. 65.)

Section 8787 of the General Statutes reads as follows:

> "Every owner, agent, manager, operator, or any one having charge of water-works, furnishing water for public or private use, who knowingly permits the appliances of the same to become in a filthy condition, or in such condition that the purity and healthfulness of the water supplied by reason thereof becomes impaired, shall be guilty of a felony, and punished by imprisonment in the state prison for not more than ten years."

It will thus be noticed that, while the Supreme Court in the Mankato case establishes the fact that a municipality may be held responsible for the purity of its water-supply, the state law would hold the municipal officers personally responsible.

The trouble at Mankato was purely an accident, resulting from general carelessness and intrusting administrative details to incompetent supervision. However, one must admit that the Court's decision is based on the fundamental principle of right and justice.

Applying This Principle of Justice

One can conceive of a great many cases differing slightly from the Mankato case, but where the general principle is much the same; for example, the emergency intake where polluted water may be used for the purpose of extinguishing fires. The principal difference here is that contamination of the supply is deliberately arranged for and life and health risks are assumed in order to reduce fire risk at the lowest possible cost. The same is true of the so-called dual connection at industrial plants. And it would seem that in either case not only does the municipality become subject to claims because of resulting sickness, but the officials also become personally responsible. Surely, if consideration is to be shown, a case such as that at Mankato, where there was no deliberate action or knowledge that risks were being assumed, would be given the preference over deliberate action and full knowledge that risks were being assumed for pecuniary reasons.

One thing the Supreme Court seemed to emphasize was that a municipality in extinguishing fires is exercising its police powers and cannot be held responsible for an inadequate water-supply; therefore, if an official should be confronted with the alternative of polluting the water-supply or furnishing an inadequate supply for fire purposes, he might be held legally responsible in the former case, but not in the latter.

Then, again, we have the case where the source of supply is badly polluted, but, because of a lack of appreciation of such conditions on the part of the people, the water continues to be used.

My legal friends seem to be of the opinion that a community in voting in favor of such a supply does not necessarily incur responsibility, inasmuch as in exercising its rights of franchise it is not acting as a responsible body. Nevertheless, there is a possibility that officials in carrying out the will of the people as expressed at an election become responsible, as they do constitute a responsible body.

Section 8759 of the Minnesota General Statutes, defining a public nuisance, reads in part as follows:

> "A public nuisance is a crime against the order and economy of the state, and consists in unlawfully doing an act or omitting to perform a duty, which act or omission
>
> 1. Shall annoy, injure, or endanger the safety, health, comfort, or repose of any considerable number of persons;
> 2. Shall offend public decency;
> 3. * * *
> 4. Shall in any way render a considerable number of persons insecure in life or the use of property."

In all of the three preceding cases, when there is knowledge that pollution exists or that risks of pollution have been assumed, it seems reasonable to my mind to say that it constitutes a public nuisance, inasmuch as they all endanger the safety, health, comfort, or repose of a considerable number of persons; and it certainly does offend public decency to think that the public must assume the risk of drinking contaminated water in order that the cost of fire insurance risks may be reduced in a few cases.

The legal responsibility for a pure water-supply is a very important matter and worthy of careful consideration by men of legal training and wide professional experience.

ACKNOWLEDGMENT.—A paper read before the Minnesota Section of the American Water Works Association.

Air Lift for Deep Wells

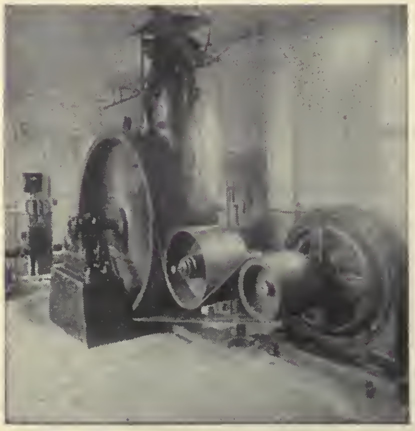
The Development and Improvement of a Simple Method of Pumping

By John Oliphant

THE first principle to be recognized in air-lift pumping is the need of a perfect emulsion of air and water at the foot-piece in order to secure the best economy. Second to this is the need for great care in calculating and proportioning the diameters of the water and air pipes for different lifts and submergences.

The village of Maywood, a suburb of Chicago, has a compressor handling a single well, pumping at the rate of 700 gallons of water per minute, with a lift of over 300 feet. This compressor has been operating for four years, twenty-four hours per day, with a stoppage of only a few minutes during the twenty-four hours for necessary examination and adjustments. The plant has been operated at the above capacity continuously, with absolutely no cost for repairs and no shut-downs except those above indicated.

There are a great many occasions when the air lift can be used as an auxiliary to a high-duty suction plant pumping from deep wells. Such a case came up at Clinton, Ill., something over a year ago, where the water is secured by suction from deep wells in sufficient amount for ordinary purposes. But in case of peak loads in the summer and in case of fire it was found that the supply secured by suction was not sufficient to cover the requirements.



AIR COMPRESSOR, GALESBURG, ILL., CONNECTED TO ELECTRIC MOTOR BY SHORT BELT

DISCHARGE FROM WELL AT CLINTON, IA.

The supply is secured from some half-dozen wells, having a surface flow of limited volume. These are connected so as to flow into a surface reservoir or may be direct-connected to mains by means of suction pumps. Experience showed that when suction was resorted to, the supply for the summer hot weather load or to meet an extended fire demand was insufficient. Three of the wells were therefore connected with an air-lift system arranged to discharge into the reservoir, using the suction piping as a gravity flow line.

A suitable arrangement of valves is provided to permit this flow from the wells to the reservoir, while the service pumps draw their supply from the reservoir by suction. By this arrangement, the water-supply was more than doubled from these three wells. One of the 8-inch wells had a natural artesian flow of about 150 gallons per minute. When under suction from the pumps, the pull-down was 20 feet, increasing the flow to 500 gallons per minute. When this well was connected up for operation under the air-lift, its production was increased to 1,035 gallons per minute, the pumping head being 50 feet below the surface. The other two wells, connected up in the same manner, showed a proportionate increase.

These wells are handled by means of a Sullivan central type air-lift pump, suspended on a 2-inch air line in the 8-inch casing. The air for operating the wells is supplied by a straight-line simple steam and compound air compressor, size 14 x 16 x 10 x 16 inches, having a capacity of 558 cubic feet of free air per minute. The installation was effected in a simple and economical manner, by piping the air from the receiver to and into the wells. When an increase in demanded, it is necessary merely to start the compressor and throw a few valves, and the supply from the wells is more than doubled.

GALESBURG, ILL., WATER-WORKS, WELL AND COLLECTOR HEAD IN CENTER OF GROUP OF MUNICIPAL BUILDINGS

Below are some figures secured from two installations at Galesburg, Ill. The first has been in operation over a year, and the second about six months. These plants are located at different points in the town, and centrifugal pumps are used to take the water from the service reservoirs and force it directly into the mains. The efficiency indicated in these reports is the electric input to the motor as compared to foot-pounds of work done, and includes all motor, transmission and compressor losses.

The city of Galesburg had considerable difficulty in securing sufficient water for the public supply. A number of wells in the neighborhood of the old pumping plant have been driven and equipped with various devices, but failed to give the amount of water needed. The old plant consists of three deep and six shallow wells, with a combined yield of about 250 gallons per minute, and has been very expensive to operate and maintain. It was therefore determined to sink a new well.

The construction of this well was as follows: 40 feet of 24-inch heavy steel casing; 106 feet of 20-inch; 130 feet of 16-inch, and 350 feet of 12-inch steel casing. The 12-inch casing is sealed in the rock. The hole was then drilled 12 inches in diameter to a depth of 1,085 feet from the surface, then reduced to 10 inches and drilled down to 1,255 feet thru the St. Peter's sandstone formation.

The well was then shot with two 200-pound charges of 100 per cent gelatin, covering the entire sand rock stratum, and was carefully cleaned out. Genuine wrought iron 10-inch pipe was installed and sealed into the top of the 12-inch pipe, approximately 350 feet from the surface of the ground. This extends to within 3 feet of the top of the sandstone stratum, hermetically sealing the well from all water in the strata above the St. Peter's sandstone. An analysis of the water from the completed well was superior to that of all other wells in the territory, on account of the sealing off of the upper strata.

At the site of this well an air-lift plant was constructed for lifting the water from the well to a small surface reservoir. Thence the water is forced into the mains against 40 pounds pressure with a centrifugal pump.

The air-lift equipment consists of one angle-compound compressor, with 16 x 9¾ x 12-inch cylinders, arranged with short belt drive and unloading valve; one standard 5-inch foot-piece (outside air line), and well-head with umbrella separator.

complete; one 42-inch x 8-foot vertical steel air receiver, and one 100-horse-power General Electric motor.

Conditions of Operation and Results of Test

The following are the conditions of operation and the results of the test on the well:

Depth of well	1,252 feet
Water pipe in well	235 feet of 5-inch 331 feet of 6-inch
Main air pipe in well	235 feet of 2-inch 331 feet of 2½-inch

On account of the severe drop, an auxiliary starting device was installed at a depth of 481 feet 8 inches to pump off the head and keep the starting pressure within the range of the compressor.

Static head (from ground)	186 feet
Drop	118 feet
Elevation above surface	7 feet
Total lift	311 feet
Operating submergence	262 feet
Percentage of submergence	45.8%
Depth of pump in well	566 feet
Operating pressure	121 pounds
Starting pressure with auxiliary	129 pounds
Gallons per minute pumped	450
Actual cubic feet of free air used	450
Revolutions of compressor	179 r.p.m.
Water horse-power (foot-pounds of work done)	35.5
Operating horse-power	94 h.p.
Efficiency per cent	37½%

High Efficiency Secured

The percentage of efficiency shown is considered excellent, and this result was made possible by careful proportioning of the sizes of air and water piping, proper location of the foot-piece or pump in the well, and by the use of the improved foot-pieces, providing a continuous flow of water. In this design the air is discharged from the foot-piece into the water, in the well casing, in a multitude of fine jets, creating a very thoro mixture or emulsion of air and water. This action secures the maximum efficiency, as the chance of slippage is reduced to the minimum.

The figures on the second plant known as Bradley Well No. 2 are as follows and are taken from a test on March 8, 1919:

Depth of well	1,245 feet
Diameter	360 feet 15 inches 250 feet 14¼ inches 635 feet 13½ inches
Water pipe in well	204 feet 8 inches 213 feet 7 inches 190 feet 6 inches
Main air line	600 feet 3 inches
Auxiliary line	500 feet 1½ inches

Conditions of Operation:

Static head from ground	190 feet
Drop	157 feet
Elevation above surface, about	7 feet
Total lift	354 feet
Operating submergence	253 feet
Percentage of submergence	41.75%
Depth of pump in well	600 feet
Operating pressure	115 pounds
Shut in pressure	110 pounds
Starting pressure with auxiliary	135 pounds
Gallons per minute pumped	650
Actual cubic feet free air used per minute	719
Displacement	883
Revolutions of compressor	214 r.p.m.
Water horse-power (foot-pounds of work done)	58.2
Operating air horse-power	148
Efficiency air compressor compared to work done	39.3%
Estimated input efficiency	35.8
Estimated motor efficiency	91%

Air-Lift Pumping and Filtration

Attention is called to the advantage of air-lift pumping in the case of wells the waters from which require treatment for the elimination of sulphates or carbonates of iron in solution or other impurities which can be oxidized and precipitated by aeration and then removed by filtration.

In this method of pumping, the compressed air is forced into and mingled with the water at the bottom, or at least deep in the well, by means of a multiplicity of fine streams or jets insuring the most intimate mixture of the air and water, every particle of the water being permeated with air as it rises in the eduction pipe. Oxidation and precipitation of the iron solution thus take place with the greatest possible rapidity, and it is then a simple matter to remove the iron by filtration. Waters containing carbonate of iron are especially susceptible to treatment in this manner. The pumping operation at the same time serves the purpose of freeing the dissolved iron so that it may be removed by the filter even without intermediate sedimentation.

The treatment of water containing sulphates of iron is more difficult, and the use of ample sedimentation tanks or basins ahead of the filter are advisable. In some cases aeration must be supplemented by the feeding of a very small quantity of lime into the water to accelerate sedimentation, but in any event the thoro aeration of the water in the pumping operation is a very important and vital adjunct to the purification process.

Combined air-lift pumping and purification plants can be arranged in many different ways according to local conditions.

In some cases the air lift merely delivers the water to a sedimentation tank combined with a filter located at the surface, and as close to the wall as practical, the effluent from the filter flowing by gravity to a surface reservoir or sump, whence it is forced by piston or centrifugal pumps into the service system or to a service tank or reservoir located at a suitable elevation.

Where the well or wells are deep enough to provide the necessary submergence, and other conditions are right to utilize the air lift (by means of an air-lift booster and relift jet) to lift and force the water in one operation from the wells to the elevated storage reservoir, this reservoir or tank also acts as a sedimentation tank and the water can pass from it thru a pressure filter into the service pipes.

DISCHARGE FROM WEIR BOX INTO CONCRETE STORAGE BASIN, GALESBURG, ILL.

A third arrangement is one by which the pressure filter is placed in the line between the well and the elevated reservoir and the water is lifted and forced by the air lift in one operation from the well thru the filter and up to the elevated service reservoir in one operation.

We should like to call especial attention to the two last-named arrangements, as it is the writer's observation that the possibilities of the air lift as a means of forcing the lifted water to a point beyond the well top are not generally realized, and, while this method has its limitations, there are many situations where it can be used to advantage, thus eliminating the complication of a separate pump with its incidental surface suction basin for this service.

In the boosters generally used in these installations, the discharge from the well is brought to a complete stop by striking an umbrella separator in the booster, throwing the water to the bottom of the booster and allowing the air to escape from the top

The Cyclone Separator

In order to overcome the difficulties of carrying air over into long pipes because of complete emulsion and to insure perfect separation of the air and water, a special separator has been designed, consisting of a simple shell or cylinder with top and bottom. The combined air and water is discharged into the top and at one side at a tangent to the periphery, under high velocity from the well, causing it to swirl, effecting in this way a perfect separation of the air and water, the water leaving the separator from an outlet at the bottom tangent to the periphery and the air passing off at the top. The downward centrifugal action completely separates the air from the water, leaving the air quite dry and freeing the water entirely from air bubbles.

The Planning of Water-Works for Fire Protection

An Analysis of the Relationship of the Various Items Entering Into This Important Service

By H. M. Blomquist

Principal Assistant Engineer, Bureau of Water, St. Paul, Minn.

THE functions performed by water-works may be considered as being three distinct services: (1) furnishing water for private use; (2) furnishing water for public use on streets and for sewers, public buildings, etc.; (3) furnishing water for fire protection to property.

It is the aim of this paper to discuss some features that are often abused or neglected in connection with the fire protection service, calling attention to some principles of design of water-works plants that should be observed in order to furnish a satisfactory fire protection service, and some statements in connection with the value of this service and methods used by various municipalities for paying for it.

Amount of Water Required for Fire Protection

From time to time during the last twenty-five years, standards for the amount of water required or desirable for fire protection have been suggested by different engineers. One of the first was John R. Freeman in 1892; later, Allen Hazen and others, in 1897; and the National Board of Fire Underwriters in 1910. Each of these gives formulae for determining the amount of water required for fire protection, and uses the number of inhabitants served as a basis for such calculations. The value of such formulae, however, may vary in different communities because there is no fixed relationship between the population and the amount of water necessary to successfully put out a fire in the various communities. What may be good fire protection for one community of a given number of inhabitants may not be for another of the same number of inhabitants because of the difference in construction, in industries, and in density of industrial sections.

The Fire Underwriters' requirements are as follows:

Population	Gallons per Minute Available for Fire
1,000	1,000
2,000	1,500
4,000	2,000
6,000	2,500
10,000	3,000
13,000	3,500
17,000	4,000
22,000	4,500
40,000	6,000
80,000	8,000
100,000	9,000
125,000	10,000
150,000	11,000
200,000	12,000

Over 200,000, 12,000 gallons, with 2,000 to 8,000 gallons additional for a second fire

It is also desirable that the pipe system be of such design as to provide at least one-half of this amount for any one block of buildings, and in a greatly congested value district the whole amount should be available for any one block.

The Proper Proportioning of Water-Works Systems

In order that proper results for fire protection may be obtained from the water-works system, it should be so designed that the maximum efficiency is obtained from its parts that enter into the furnishing of the water. Each of the following factors should have the proper relationship to the whole system: source of supply, pumping equipment, reservoir or storage capacity, water pressure, distributing mains, and the location of hydrants. Each of these is a link in a chain that supports the fire department in its efforts to put out a fire, and this support is no stronger than the weakest of the links. If the reservoir is of large capacity but the pipes are small, much of the cost of the reservoir is practically wasted. If the hydrants are not properly spaced, the advantage of large distributing mains is to a considerable extent lost. The spacing of hydrants and the sizes of hydrant connections are very important in attaining high efficiency of a system for fire service.

The Need for Adequate Water Pressure

The water pressure in the mains is of greatest importance if fire engines are not used, because a stream under heavy water pressure is very much more effective than one under low pressure, even tho the same amount of water may be used on the fire. Unless water is applied to burning materials in buildings at a high velocity, much of it does not reach the seat of the fire because of the difficulty of access and because of draft from burning gases. It is, then, either evaporated or decomposed into the two elements, hydrogen and oxygen, a part of which in turn combines with carbon of the burning materials and forms inflammable gases, which again burn. The water that does not reach the burning material is of little value, if any, and when transformed into gases may even be an aid to the flames rather than a means of putting them out. In order to be of most value, a fire stream must have a velocity that can be obtained only from a good pressure at the hose nozzle. As little as possible of the available pressure should be used up in hose and water system friction. It is, therefore, important that hydrants and mains should be of such sizes as to decrease as little as possible the water pressure at the hydrant nozzle by friction in the pipes, hydrants and connections during the time of heavy flow.

The amount of pressure lost by friction or resistance in fire hose is a considerable item and varies very nearly as the square of the velocity or quantity of water flowing thru. A few examples of the effect of this are shown by the following results obtained from various lengths of 2½-inch rubber-lined cotton fire hose attached to a hydrant which has a constant pressure of 60 pounds at the hydrant nozzle.

When a 1⅛-inch stream flows from a smooth-bore nozzle, with 100 feet of hose it is possible to throw a stream of 250 gallons per minute 67 feet high; with 200 feet of hose this is reduced to 222 gallons per minute thrown 59 feet high; with 400 feet of hose it is reduced to 188 gallons per minute thrown 44 feet high; with 700 feet of hose it is reduced to 158 gallons per minute thrown 33 feet high; and with 1,000 feet of hose it is reduced to 140 gallons per minute thrown only 25 feet high. It is, therefore, important that hydrants be spaced quite closely together in areas of towns and cities that are occupied by business or industries where fires are apt to be of a serious nature, in order that all available pressure may be utilized in fighting the fire. There is a large waste of power in pumping all the water against a 60-pound head and getting only about 25 pounds effective pressure at the nozzle of a long line of hose.

The friction of water in fire hose is very often neglected. Long lines of hose are laid where short ones could be used, and the water department is sometimes blamed for not maintaining a good water-supply under proper pressure when the fault lies in poor judgment in locating the proper hydrants on which to make connections, and in using much longer lines of hose than are necessary in reaching a fire. Of course, there are conditions where long lines of hose are absolutely necessary, but these conditions should be overcome as much as possible by placing additional hydrants.

The Necessary Factors for a Well-Balanced Supply

The relation between the size of storage reservoir, pumping machinery, and source of supply must necessarily vary with local conditions, and for a well-balanced system a certain inverse ratio should exist between these factors. If it is possible to have a reservoir at an elevation to give the desired pressure and with a capacity sufficient to care for the heaviest fluctuations in the amount of water used for all possible emergencies, the pumping machinery and source of supply need not be of greater capacity than to safely take care of the average supply with a fair factor of safety. If, however, it is impossible to provide large storage of water for emergency uses, the water-supply and pumping machinery must have sufficient capacity to furnish the required quantity during the time of the emergency. The possible size of the reservoir is affected generally by topography, and the desired capacity is governed by the facilities for pumping and the size of the available water supply.

The effect of the topography upon the design is often to change the reservoir from what is desirable to what is feasible. In a comparatively flat country it is impossible to store as much water as is desirable at a high elevation, and in such cases the distributing reservoir must be reduced in size, and other portions of the system, such as the available supply and size of pumps, must be increased so as to do the work which should properly be done by the distributing reservoir.

For example, in a perfectly flat territory where an elevated tank is the only feasible form of reservoir, it will at most be only a means of making it possible to store a part of the water that will be necessary for large fires, and, therefore, the main water-supply must be provided by pumping during the time of fire. In such a case it is necessary to have a supply and pumping capacity sufficient to furnish nearly all the water that will be required for fire protection at the time of the fire. If wells are used as the supply in such cases, a storage reservoir at a low elevation, where it is convenient to build one, will serve as a suitable supply. Where the topography is such that it is feasible to build a reservoir of any desired size and at proper elevation, the capacity is dependent almost entirely upon the requirements for fire protection.

The pressure furnished by the reservoir should be such as to give the required quantity of water at the proper pressure for fighting fires; and as this depends also on the size of the pipes, the pipe sizes and the reservoir pressure have a certain relationship one with the other and must be considered together. The cost of pumping water against a high pressure must also be considered in the design of reservoir and mains. Generally it is found that from 80 to 100 pounds per square inch is the most economic available pressure at points where there is likely to be the greatest demand for water. The elevation of the reservoir necessary to obtain this pressure will depend to a large extent upon the distance from the reservoir to the center of distribution, and the size of mains used.

The Maximum Desirable Pressure

The maximum desirable pressure is a matter on which there is much disagreement. For direct hydrant streams the National Board of Fire Underwriters recommends a pressure of at least 75 pounds at the hydrant when the water flows from it at its rated capacity, except that where not more than ten buildings exceed three stories, a residual pressure of 60 pounds is permissible. In closely built residential districts a residual of 60 pounds is considered sufficient for direct hydrant stream, with 50 pounds in thinly built sections of low height. Where fire engines are used the Board recommends that the pressure on the full flow should not drop below 20 pounds, except that a minimum pressure of 10 pounds is permissible under certain conditions. In small cities it is generally economical to maintain, if possible, a pressure of from 50 to 100 pounds in the system and thereby not require the use of fire engines for good fire protection. In large cities, instead of pumping all the water against the heavy pressure it is more economical to maintain a lower pressure in the mains and to use fire engines to create the high-pressure fire streams.

As stated before, the size of the reservoir must necessarily depend upon local conditions, but should be, if possible, large enough to hold at the required elevation, in addition to the domestic supply for 24 hours, a sufficient quantity of water with which to fight any fire that is likely to occur. A fire in the built-up portion of a small city may take from one to five thousand gallons per minute, and in general the time during which this quantity will be required will not be more than from two to four hours. Applying this rule to the ordinary small city where there are no large fire risks, the capacity of the reservoir or stand-pipe should be from 120,000 to 1,500,000 gallons. During the time the water is being drawn from the reservoir it will also be possible to run the pumps, which will provide additional water, the amount of which will depend on their capacity. In all cases it is important that the water mains be of such sizes as will furnish the required amount of water at the desired locations during the time of heaviest flow, with a reasonable amount allowed for friction loss.

Automatic Sprinkler Systems

In this paper no mention has been made of water-supply for automatic sprinkler systems in buildings. Altho automatic sprinklers are very important as a means of fire protection, the amount of water required for such is not very large, and does not constitute very much of the total amount required for all purposes. Such systems are rather a means of reducing the amount of water necessary for proper fire protection by helping to keep the fire under control until the fire department arrives, and sometimes by extinguishing it entirely.

Maintenance of System

In addition to having the proper design for a water-works plant, it is of utmost importance that the mechanical equipment, fire hydrants, gate valves and other appurtenances be maintained at a high state of efficiency so as to be reliable and always ready to perform their proper functions. There should be a thoro and systematic method of inspecting all equipment, with special emphasis on fire hydrants in freezing weather. Pumps and engines or motors should consist of at least two separate units, each of sufficient capacity to take care of all requirements, so that if one unit is out of order on account of breakdown or repairs, the other unit will be able to furnish the required amount of water.

Value of Fire Protection Furnished by the Water-Works

The fire protection service performed by the water-works, as well as its other functions, should have its just share of the operating expenditures balanced by operating receipts. In order to strike such a balance, the value of this service, or the cost of furnishing it, must in some way be determined. Many standards for determining the value or cost of furnishing fire protection have been used by various municipalities, and in many instances it has been neglected altogether. In order to arrive at an equitable basis for determining such value, it is necessary to consider the difference in the design and operation of a system necessitated for the purpose of furnishing fire protection.

In a large city the requirements for fire protection do not play as large a part relatively in the design of a system as they do in a small city, except in certain details such as fire hydrants, the size of mains, and to some extent the capacity of the pumping equipment, because in a large city the requirements for private and public use are usually very large, and constitute the greater portion of the total capacity that must be provided. In smaller cities, except the source of supply, as far as construction is concerned, the fire protection requirements determine nearly all the important features and include the pressure to be maintained, the size of the storage reservoir, the size of mains, and the pumping plant. These portions of the plant could be made much smaller and much less expensive were it not for the fire protection requirements.

What Portion of Plant is For Fire Protection?

The portion of the entire physical property of a water-works plant involved in fire protection has been estimated by competent authorities to be as great as 80 per cent. The National Board of Fire Underwriters estimates that the per cent of cost of a distributing pipe system chargeable to fire protection service for various size cities is as follows: one having 10,000 population, 56 per cent; 50,000 population, 29 per cent; 100,000 population, 17½ per cent; 300,000 population, 4 per cent. Of the entire cost of the plant chargeable to fire protection service the estimate is as follows: 10,000 population, 60 per cent; 50,000 population, 32 per cent; 100,000 population, 23 per cent; 300,000 population, 13 per cent. Other authorities have given higher proportions as the cost of this service, especially for larger cities. The investigation of the cost of furnishing fire protection to a section of Greater New York for a population of about 400,000 people, using an average daily supply of 38,000,000 gallons of water served by a private water company, showed that only 3 per cent of the total investment and 15 per cent of the operating expenses were attributable to fire protection, but with allowance for depreciation and interest on investment, the cost of fire protection was found to be approximately 21 per cent of the total cost of furnishing water by this company.

Messrs. Metcalfe, Kuichling and Hawley, in their paper on "Reasonable Return for Fire Hydrant Service" (American Water Works Proceedings, 1911, page 66), make this statement: "The cost of the portion of the water-works plant involved by fire protection service probably constitutes from 60 to 80 per cent of the entire cost of the property in the case of communities having less than 5,000 population, 20 to 30 per cent in communities of 100,000 population more or less, and perhaps 10 to 20 per cent in case of our large cities." It is certain that the cost of furnishing fire protection constitutes such a large part of the total cost of the plant and the value of the water-works share in furnishing this protection is of sufficient importance to warrant special attention by municipalities.

For fire protection the amount of water consumed is very small; therefore the value or cost of the service cannot be measured by the amount of water consumed, but must be derived from the cost of the additional construction and equipment required, and the maintenance of such additions. That part of the water-works plant chargeable to fire protection consists of the additional pumping capacity, increased size of water-mains, larger storage facilities, and the cost of hydrants. The approximate cost, therefore, of fire protection consists of the following items: the interest on the additional investment necessary in the water-works plant by reason of the increased amount of construction required, as stated above, and the maintenance of this portion of the plant; also a certain amount of the attendant and inspection charges necessary in order to have the plant ready for operation at all times, day or night, which otherwise would not be necessary, especially if sufficient storage is provided for the ordinary consumption.

The conception of the value of fire protection service may also be obtained by comparisons of fire insurance premium rates under efficient fire protection and under no fire protection. This protection is made up of a fire department, together with the water-supply provided for this purpose, and the water-works share of it consists of providing the agencies necessary for furnishing an additional amount of water under proper pressure over and above that necessary for the ordinary consumption; the value of the water-works part in it bears the same proportion to that of the fire department as the cost incurred by the water department in furnishing this service bears to that of maintaining the fire department. The difference in the insurance rates, however, is not the only value of good fire protection. There are other factors, such as the effect of economic waste resulting from loss of business, income and wages in the reconstruction following the fire, and the loss of property that cannot be replaced.

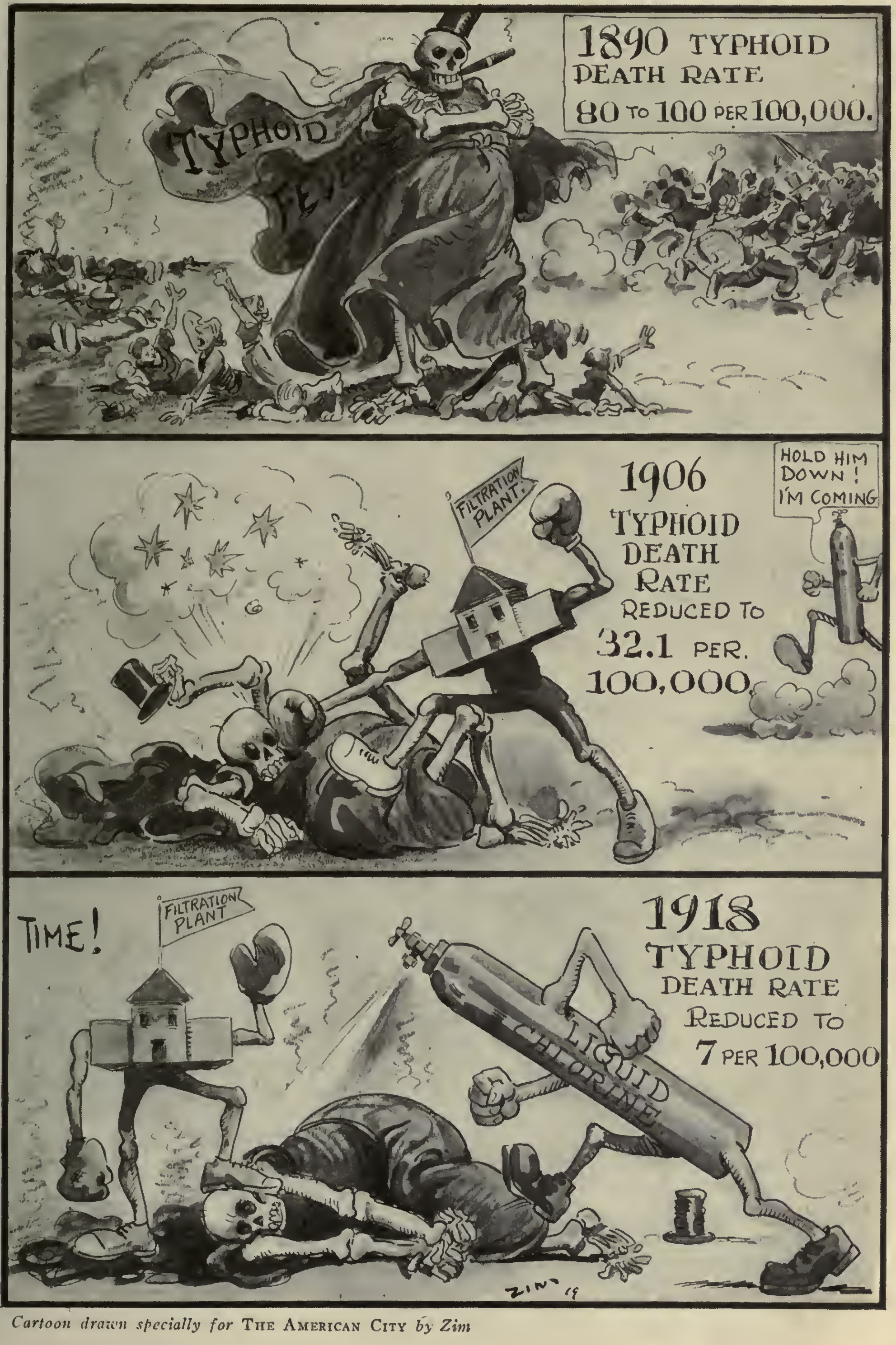
Method of Payment for Fire Service

There are various methods used by municipalities in paying the water company or the city water department for its share of this service. A common method is to pay a monthly or annual hydrant rental of a fixed amount for each hydrant installed. While this method cannot be considered sound from either a business or a technical standpoint, it is perhaps the simplest way of paying something for the service. There are valid objections to this method, one of these being that the number of hydrants used multiplied by a stipulated amount does not represent the cost nor the value of the service, but perhaps the greatest objection to it is that, where the water-works are privately owned, it will tend to prevent the installation of the proper number of fire hydrants that are required for good fire protection in order to save on the annual hydrant rentals. It is believed that a more desirable method of paying would be an annual lump sum based upon the cost of the service to the water company, or city water department, and upon condition that the city should control the location and number of hydrants to be maintained. This lump sum should be revised from time to time in order that it may be equitable and provide for additional service as the system is enlarged. There should be no objection, however, to dividing this amount by the number of hydrants in use and calling it hydrant rental, provided the number of hydrants is not reduced below the requirements for good service.

Acknowledgment.—From a paper read before the Minnesota Section of the American Water Works Association.

> *The most pressing of all civic problems is that of municipal home rule.*
>
> —Tom L. Johnson.

Is Your City in the Vanguard Fighting Water-Borne Typhoid?


TYPHOID
1890 TYPHOID DEATH RATE 80 TO 100 PER 100,000.
FILTRATION PLANT.
1906 TYPHOID DEATH RATE REDUCED TO 32.1 PER. 100,000
HOLD HIM DOWN! I'M COMING
TIME!
FILTRATION PLANT
1918 TYPHOID DEATH RATE REDUCED TO 7 PER 100,000
LIQUID CHLORINE
ZIM 19

Cartoon drawn specially for THE AMERICAN CITY *by Zim*

The Gunpowder of Race Antagonism

By Mary White Ovington

Chairman, National Association for the Advancement of Colored People

THE United States has recently passed thru two terrible race riots, that at Washington and that at Chicago. These cities have suffered in loss of life and of property. They have also suffered in good name; the state of Illinois, bearing the unenviable distinction of having permitted three race riots—at Springfield, east St. Louis and Chicago—within ten years. During these weeks of rioting, inhabitants of American cities having a large Negro population have been tense, apprehensive lest some inadvertent act might lead to mob violence. But a town should not blow up from the igniting of a single grain of gunpowder. Unless a train is laid to some powder magazine, the result is only a slight flareup. How then, we need to ask ourselves, was the train laid in these two cities and are we laying any lines of gunpowder in our own communities?

Four Outstanding Causes

There were four outstanding causes for the recent riots: in Washington, the playing up of Negro assaults upon women in the daily press; in Chicago, the conflict between organized and unorganized labor, corrupt politics and the housing situation.

To take the last cause first: The exodus of Negroes from the South has been conservatively estimated at half a million. Of this number many have migrated to northern cities, where they have been sought by employers in great industries. Chicago has in the past two years gained about fifty thousand such colored workers. These men have come expecting to make a permanent home in the city, often bringing their families with them. They have found work, but no provision has been made to secure them proper housing. Comparatively few buildings have been erected during these two years, and the city, already full, has been overcrowded by its newcomers.

The old State street neighborhood, the black Bowery of Chicago, has taken in lodgers beyond a decent limit, and the colored people have spread west and south. The better class, especially, have moved south, securing a precarious foothold in many attractive streets. That the foothold has been precarious has been shown by the bombing of eight houses. One house has been bombed twice, the Negro occupants courageously remaining even after the second attack upon their home.

The political government of Chicago offers a second reason for the breaking out of mob violence. The Negroes helped elect the present mayor, who, in return, is believed to have catered to their worst element, leaving their part of the town wide open, and winking at violations of the law committed by their political leaders and their friends. Next to the colored ward is the Irish, also wide open, and for years Negroes, going to their work, have made a broad circuit, rather than risk walking thru the enemy country. With such a condition in normal times it is easy to see what depredations might be made when mob law is in the ascendent.

The third reason for the riots was the labor situation, the antagonism of the white laborer for the newcomer who accepted a lower wage than he. Unquestionably Negro labor is at times a menace to the white workingman with a high standard of living, just as Polish and South European labor has been before him. That the Negro has been organized since he came to Chicago is shown by the fact that in the stock yards, where 15,000 are employed, fifty per cent are in the unions. Still this is far below the ninety-five percentage for the whites. Labor antagonism was probably the dominant note in the Chicago riots, as it unquestionably was in those at East St. Louis in 1917.

Of the fourth cause, the playing up of Negro crime, we have no evidence in Chicago but ample proof in Washington. For weeks before the outbreak the papers in that city featured Negro attacks upon white women. That there was any more crime of this sort than normally occurs in a large city we have no reason to believe. From June 25 to July 18, according to the records of the police department, there were four attacks in the District of Columbia, and the probable culprit in three of these cases was jailed pending trial some days before the rioting. The papers, however, by inflammatory headlines, gave the public the impression that crime was in the ascendent and that no woman was safe from Negro assault. In the same way the riots in Atlanta were worked up by the press.

This was the train of gunpowder, and few of us looking at our own cities can fail to see that we are dropping some inflammable material along the same lines.

Take the housing situation: The Negro who lives in poverty usually gets the worst deal the city has to give. If he leaves the alley and the slum, as he has in New York, it is thru a series of fortuitous happenings plus the farsightedness of his own real estate dealers and his indomitable grit. It is not pleasant for colored people to break into a new neighborhood; if they are not bombed, they are often insulted and are subjected to much petty attack. They are also subject to the sharpest of sharp dealing on the part of real estate interests, and on entering a new home are always charged more than the former white tenants. This practice makes them skeptical regarding the loss in real estate values of which they so frequently hear. They themselves suffer chiefly from the utter disregard of the owner of Negro property to the character of his tenants. While in a white neighborhood the landlord often shows a desire to keep up the standard of respectability of his block and turns down the criminal, in a Negro neighborhood whoever pays the highest rent gets in. Thus we have bootlegger and street walker living in an apartment with law-abiding, self-respecting Negro families. New York's colored neighborhood in Harlem, of 150,000 residents, contains within its few blocks the best but also the most criminally inclined Negroes in the world. Under these circumstances, colored parents are continually endeavoring to get into a new place where viciousness is not permitted to show itself. They invade white blocks. In all our large cities, north and south, there are many colored homes scattered among the whites where the two races live in peace and usually in amity. But where the population is large, the better Negro element, as it surges forward entering a new area in considerable numbers, causes race friction and sometimes almost a panic.

Probably little can be done to stabilize real estate values when a neighborhood once loses its exclusive character. Good old residential sections in every great city have gone their way. Many an old mansion has seen in its turn the Irish, the German, the Italian, the Russian Jew, the Negro. So long as America spells opportunity, we shall see these invasions, the old families moving to newer and more attractive districts, the old homes occupied by foreigners or by colored families. To prevent this, some southern cities tried segregation by municipal ordinance, until the Supreme Court of the United States declared such an ordinance

CHICAGO POLICEMAN ASSISTING COLORED FAMILY TO A SAFETY ZONE unconstitutional. Even now we have the same thing attempted despite the decision of the courts. Recently in Oklahoma City the Negroes have been clamoring for a hospital, and were on the point of obtaining one when the city officials voted the appropriation down, on the ground that Negroes had attacked a municipal segregation ordinance and that until they accepted segregation nothing would be done for them. The Negroes, on the other hand, replied that they would not permanently remain in their present unhealthy quarter by the creeks and mudholes, but that they intended to live in a healthier part of the city. The matter has not yet come to a decision, both sides holding out, but it shows that segregation ordinances are for the benefit of those who pass them, and that Americans, black or white, mean to recognize no limit to the possibility of bettering their housing conditions save that of their pocketbooks.

An interesting experiment has been made in Cincinnati that should be worth following in other cities. A small community settlement, occupying seven acres, was opened up for Negroes in 1914 by Mr. J. G. Schmidlapp. It is in a beautiful wooded section of the city, and is built along the best lines of modern apartment-house construction. On a modest scale it resembles the Forest Hills experiment of the Russell Sage Foundation. Small Negro sections such as this, healthfully situated, would relieve the tension. The colored man usually gets second best, with an anathema from his new white neighbors. That the situation is a complicated one is only too apparent, and its very difficulty shows that it should no longer be left wholly to the dealer in real estate.

The second cause of the riots, political corruption, a mayor elected by the black vote, the consequent catering to the worst type of politicians, is not peculiar to any one city. The Negro has had long training in party politics and stands in with the spoilsman. The reason is obvious—only thru the municipal, state or federal government has he been able to get an attractive job. But, with his improved economic position he is less dependent upon patronage and is ready to take his place in the city's life. Men engaged in civic betterment could get much help from the younger generation of colored men. The colored soldier is today making his decision in party politics. Those desirous of securing the best for their city can use his enthusiasm, his spirit of service; or, as has heretofore been the case, can ignore him and send him into the camp of the ward heeler, who welcomes him with a glad hand.

With the last two causes, the conflict between organized and unorganized labor and the inflammatory headlines of a hostile press, the Negroes alone will have to deal. In Chicago at the present moment they are "between the devil and the deep sea" when they attempt to grapple with the labor problem. If they remain unorganized, their lives are in jeopardy, and yet they know from bitter experience that white men have gotten them into the union only to so manage later, at a slack time, that they are the first to be relieved of their jobs. As non-union men they stand well with their employers and receive a certain amount of protection from them. The recent action of the American Federation of Labor at Atlantic City, recommending the organization of all Negroes, in white unions when possible, or if this be not possible, in colored unions affiliated with the American Federation of Labor, gives the Negro a better labor standing. His most thoughtful leaders are advising him to enter labor's ranks. Certainly, from the viewpoint of the riot, no drop of gunpowder is more easily ignited than that labeled "scab."

"Black Brute Assaults White Woman!" "Frightful Murder Committed by Negro!" These and similar headlines have led the American people to believe that the Negro to an unusual extent is given to crimes of violence. Recent statistics, however, show that the white woman is in less danger of assault from the black than from the white man. But so long as the black man's crimes are always labeled, while those of the rest of the population are simply crimes unassociated with any ethnic group, society will continue to have the impression that the Negro is unusually dangerous. A study of newspaper headlines during the two recent riots reveals a constant tendency to feature the black who remains on his own street as the aggressor, and the white who rushes from his own quarter into the black belt as the oppressed. This featuring of news is not likely to change until the Negroes constitute a powerful group in the community. For the present they will be played up as criminals or buffoons as many another group has been played up before them. Fortunately they have friends on the editorial staffs of both southern and northern papers who somewhat temper the boldface headlines of the first pages.

Summer is the time for deeds of violence; but, before another summer comes around our cities should have taken steps to make impossible such disgraceful and bloody riots as have taken place this year. They can only do this by a careful study of the conditions existing between the two races, a study undertaken in a kindly temper with the heartiest coöperation of black and white. Our greatest sin is not violence, but indifference. Only when there is indifference to the welfare of a group mass in the community can such race riots as those of Washington and Chicago occur.

A Suggestion for Fire Prevention Day

THE interest of public officials, in connection with Fire Prevention Day, October 9, will be greatly increased by the plans of the Society for Fire Resistive Frame Construction of Chicago.

Fire departments that wish to conduct a demonstration of the rapid combustibility of frame houses as ordinarily built will be aided by the Society in designing a test house. No more constructive work could be done by a municipality than to demonstrate to the public what "bonfires" most houses may be. When the rapid spread of fire is understood, the salutary effect will be noticed not only in the improvement of new construction but also in the care of avoiding the present fire hazards of rubbish, oil-soaked clothes, matches, etc. Fire prevention engineers are advocating building construction in which every part is entirely incombustible and in which protection around all members which deteriorate rapidly under the action of fire is provided by insulating materials.

Wood construction is entirely eliminated from this ideal, but we cannot attain this ideal at the present time, especially in home construction. Wood is too important and too economical a structural material to be eliminated from present-day construction. Realizing this, it is more feasible to advocate a method of using wood for joists and studs and of protecting this by a high fire-resistive coating. We should eliminate as far as possible the use of any pieces of wood smaller than 8 square inches cross-section, as fire does not develop rapidly in wood of this size, and anything smaller is merely "kindling wood."

Specifically, this eliminates wood lath and wood shingles, both of these materials being most hazardous because their small size permits them to be quickly ignited and because they are both normally used in very hazardous positions. Wood lath, even when coated with plaster, has a fire-resistive value of about 5 to 7 minutes; and when a fire enters a partition with wood lath in it, the wood lath supports the combustion and adds quickly ignited kindling wood to the flames. Wood shingles are in an even more hazardous position because they are entirely exposed to any firebrand that may fall from fires in adjacent buildings.

A test house has been designed to demonstrate the rapid combustibility of wood lath and shingles and at the same time show the fire-resistive value of identically the same wood frame construction with metal lath and fire-resistive shingles. A fire can be started in the kindling wood half of this house and quickly consume it to the ground, while the other half will resist the fire in an amazing manner. A test house constructed like this, with the plaster left to dry 15 or, better, 30 days, is a splendid demonstration for any civic body to make.

This test can be conducted at any time, but Fire Prevention Day, October 9, is the psychological day, because of the fact that attention is being drawn to fire prevention at this time by fire prevention societies, fire departments, the national government and the public schools thruout the country. The conduct of this test should be made a civic matter. Such organizations as the Fire Department, the City Building Department, associations of local fire insurance men, the Mayor of the city, School Board, Real Estate Board, Chamber of Commerce and other civic organizations should coöperate to increase its importance. A vivid realization of the combustibility of the modern home will be brought to the consciousness of hundreds and possibily thousands thru such spectacular demonstration.

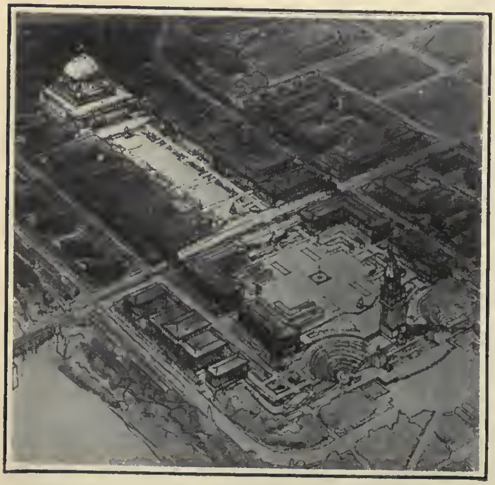
Coöperation is needed from every side to eliminate the most inflammable materials from the modern American home. Plans and specifications for the typical test house may be obtained without cost from the Society for Fire Resistive Frame Construction, Room 742, 72 West Adams Street, Chicago, Ill.

Minnesota Proposes a Memorial Hall

By O. B. McClintock

Minnesota State Memorial Commission

IN a report recently presented to Governor Burnquist, the Minnesota State Memorial Commission suggests the creation of a beautiful mall upon the campus of the State University, with a magnificent memorial auditorium on the northern end capable of seating six to eight thousand, and with several additional rooms suitable for meetings of veterans. The auditorium which the Commission recommends would also have proper space for relics and documents of the various wars. The names of the men and women of Minnesota who have served would also appear on bronze tablets in the rotunda of the auditorium. At the southern end of the mall, on the banks of the Mississippi, it is proposed to erect a stately campanile, 225 feet in height, in the tower of which would be chimes and on the walls of which would appear the names of all the Minnesota men and women who have died in the service of their country.



BIRDSEYE VIEW OF THE PROPOSED MEMORIAL AT THE UNIVERSITY OF MINNESOTA

THE CAMPANILE, THE DOMINANT FEATURE OF THE PROPOSED MEMORIAL HALL

In arriving at this recommendation, the Commission was influenced by a large number of letters, telegrams and petitions from all parts of the state, urging that the proposed memorial should take the form of a building with accessories. The proposed memorial commemorates the valor and deeds of those who served in the civil war and the Spanish war, as well as of those who took part in the recent struggle.

The accompanying sketches show the general features of the proposed mall, with the auditorium and the campanile as the dominant features.

Experimental Zone Fare for New Jersey Street Railways

By Delos F. Wilcox

The Public Service Railway Company of New Jersey operates one of the largest street railway systems in the country. It consists of nearly 800 miles of single track, serving over two million people, distributed among 141 municipalities, ranging all the way from a few hundred in population to great cities like Newark and Jersey City. The system gridirons the state of New Jersey. It includes not only the great residential district in the northern part of the state which lies within commuting distance from New York, but also includes the Camden district, which is in a similar position with respect to Philadelphia. The Public Service Railway Company has no fewer than 119 corporations represented in its family tree. Their consolidation into a single system was effected over a period of many years thru leases, mergers, consolidations and the acquisition of stock control. Furthermore, the Public Service Railway Company itself is one of three big sisters that dwell under the paternal roof of the Public Service Corporation of New Jersey, a holding company with headquarters in the new Public Service Terminal Building at Newark.

Six Operating Divisions

The Public Service Railway system is divided into six operating divisions. The Essex Division includes the city of Newark and the surrounding cities and towns in Essex County. The Hudson Division includes Jersey City, Hoboken, Bayonne and other cities and towns in Hudson County. The Passaic Division includes the cities of Paterson, Passaic and other municipalities in Passaic County. The Bergen Division includes Hackensack and a large number of small communities in Bergen County. The Central Division includes Elizabeth, Perth Amboy, New Brunswick, Plainfield, Rahway and other communities in the central part of the state, extending from the boundaries of Newark as far as Bound Brook. The Southern Division includes Camden and the surrounding communities. The Public Service Railway Company does not control the local street railway system of Trenton, but, thru the Public Service Railroad Company, an affiliated concern operating under steam road charters, it has a Fast Line on private right of way running from Newark to Trenton and there connecting with the Riverside Line of the Southern Division, which extends from Trenton to Camden. Prior to 1918 the fares charged by the Public Service Railway Company and the transfers issued were controlled in large measure by municipal ordinances enacted by upwards of 90 municipalities, restricting the fare to five cents and stipulating that free transfers should be issued on all or a part of the lines in each municipality. In practice the company had extended the five-cent fare and free transfer privileges considerably beyond the ordinance requirements. Of course, the company did not give a universal five-cent fare and free transfers over its entire system, but with very few limitations, the Essex Division and the Hudson Division, for example, each constituted a single five-cent zone.

Emergency Relief Granted in 1918

Last year, however, in proceedings directly affecting certain other utility companies, the New Jersey courts held that the Board of Public Utility Commissioners was clothed with authority to increase the rates notwithstanding the limitations which may have been incorporated in the municipal franchise ordinances. This gave the state commission jurisdiction to establish a new schedule of rates for the Public Service Railway Company. The Public Service Gas Company and the Public Service Electric Company applied to the Commission for emergency relief in February, 1918, and were permitted, after very brief hearings, to add certain war surcharges to their established rates. After these matters were out of the way, the Public Service Railway Company came forward with an application for permission to charge seven cents in place of five, two cents for each initial transfer and one cent for each transfer on a transfer. It took the position that an emergency existed which required the Commission to grant immediate relief without waiting to go thru the slow processes of a regular rate case based upon a valuation of the property. The application was opposed by the New Jersey State League of Municipalities, and after the hearings were closed the Commission in July denied the company's application for permission to depart from the five-cent fare, but authorized the installation of a charge of one cent for each initial transfer beginning with August 1, 1918. Almost immediately thereafter the National War Labor Board announced its decision in a wage dispute which had been submitted to it as a result of a brief strike in the preceding June. The award carried an increase in wages which, according to the company's estimates, would result in an increase of $1,630,000 in its annual payroll. The company, therefore, immediately filed with the Commission a new application for permission to instal the seven-cent fare; and, after hearings in which the municipalities offered no expert testimony, the Commission in September issued a new order authorizing the company to charge seven cents for the period beginning October 15, 1918, and ending March 31, 1919. On April 1, 1919, the fare was to be reduced to six cents; the charge of one cent for a transfer was to be continued.

Elaborate Rigid Mile Zone Plan Proposed

In the meantime, as a part of its first order, the Commission directed the company to make a study of zoning and to prepare and submit a plan for a readjustment of fares on a basis that would be more in accordance with the relative cost and value of the service rendered to the different classes of riders. In March, 1919, the company presented an elaborate zone report proposing a pretty rigid system of mile zones all over its lines, with an initial rate of five cents for the first zone and one cent per zone-mile thereafter. A charge of one cent was to be made for each transfer, which would be merely a "ticket of admission" to the second car, as the transfer passenger would then have to pay one cent per zone for whatever distance he might ride on the second car, the same as if he had continued on the first car without transfer.

At the time of filing this plan the company asked the Commission to modify its second order so as to permit the continuation of the seven-cent fare pending the Commission's decision on the zoning plan. This application for a modification of the second order was at first denied and the fare was reduced to six cents on April 1, 1919. After further hearings, however, the Commission modified its September order and the seven-cent fare was restored early in May. Meanwhile the company put in evidence an appraisal of its property which had been made by Dean Cooley of the University of Michigan as of December 31, 1915, without the coöperation or supervision of the Commission or the municipalities. This year the application was opposed by Newark, Jersey City and a number of other municipalities, and evidence was produced to show both that the company's plan was unsatisfactory and that the valuation claimed by the company was excessive.

Strike Referred to National War Labor Board

In March, 1919, just at the time when the company's zone report and plan were filed, the employes went on strike. Subsequently the questions of dispute between them and the company were referred to the National War Labor Board. A decision was rendered June 25, 1919, under which the company estimated that its annual payroll would be further increased to the extent of $1,175,000. It thus appeared, from the company's point of view, that even before the original zoning scheme had been approved by the Commission, it would have to be modified so as to produce more revenue than was deemed sufficient at the time the report was filed. During the hearings evidence was produced by the municipalities stressing the point that something must be done to conserve to the railroad company the short-haul traffic which, under the seven-cent fare, was being absorbed by the jitneys. The witnesses for the municipalities maintained that the company's zone plan, with five cents as the minimum fare for a mile ride, plus the transfer charges, would not recover for the company much, if any, of the traffic that had been lost to the jitneys and would not develop new business by encouraging the riding habit. On behalf of the municipalities, Mr. Walter Jackson, who for seventeen years had been connected with the Electric Railway Journal, testified as to the remarkable results obtained in British cities by the policy of frequent service and low fares for short riders; and Dr. Robert H. Whitten, city planning expert of Cleveland, testified along similar lines, pointing out especially the disadvantages of the company's plan from the point of view of the distribution of population and the decentralization of industrial plants.

Three Cents For Initial Ride

As a result of these various facts and conditions, the company on July 29 offered to put into effect temporarily a new plan based upon a three-cent initial fare for the first zone mile traveled, with two cents a mile thereafter, without any transfer privileges whatever. The municipalities had not completed their testimony with respect to the valuation of the property. Without admitting that the proposed new rates were just and reasonable, the municipalities consented to interrupt the presentation of their case long enough to permit the company to put in its new plan before the Commission, with the understanding that if the Commission approved the proposed rate, it would be put into effect as a temporary and experimental rate pending the conclusion of the case and the Commission's final determination as to the valuation of the property and the amount of money to which the company was entitled as a return on its investment. Under these conditions, the Commission issued an order authorizing the company to instal the new plan with certain modifications on September 14, 1919. Beginning on that date, therefore, the principal street railway system of New Jersey will be operated on the basis of mile zones with an initial charge of three cents, good for the first zone, and a charge of two cents per zone thereafter. No transfers will be given. A passenger who transfers from one car to another will have to pay on the second car just the same as if he were beginning his ride.

The municipalities submitted a plan calling for a three-cent fare for the first zone and one cent per mile thereafter up to a total distance of five or six miles, with an increase to one and one-half cents per mile for the long suburban and interurban rides. If the valuation fixed by the Commission, after all the evidence is in, is not too high, the temporary rate in effect September 14 may be reduced so as to correspond more closely with the municipalities' plan. Obviously, the temporary rate, while advantageous from the point of view of the short-haul rider, will work considerable hardship upon city riders whose regular routes are from three to five or six miles in length. For still longer distances the rate may prove to be nearly prohibitive. The rate will also work hardship in the case of those who are compelled to change cars in the middle of a zone without the benefit of a transfer.

Significance of the Experiment

In spite of these limitations, the new plan initiates a movement that is quite the opposite of recent fare movements in this country. It is based upon the theory that in order to live the street railways must increase rather than decrease the amount of service rendered by developing the riding habit and cultivating short-haul traffic. The experiment is one of great importance to the electric railway industry and to the country at large. No community would object to a company's securing the additional revenues necessary to meet the increased cost of service if such additional revenues can be secured by a better utilization of the transportation facilities now available. Larger revenues derived from a larger number of people who are willing to buy transportation in small packages will not give offense to anybody.

"REFRIGERATION IN ITS RELATION TO THE MUNICIPAL POWER PLANT"

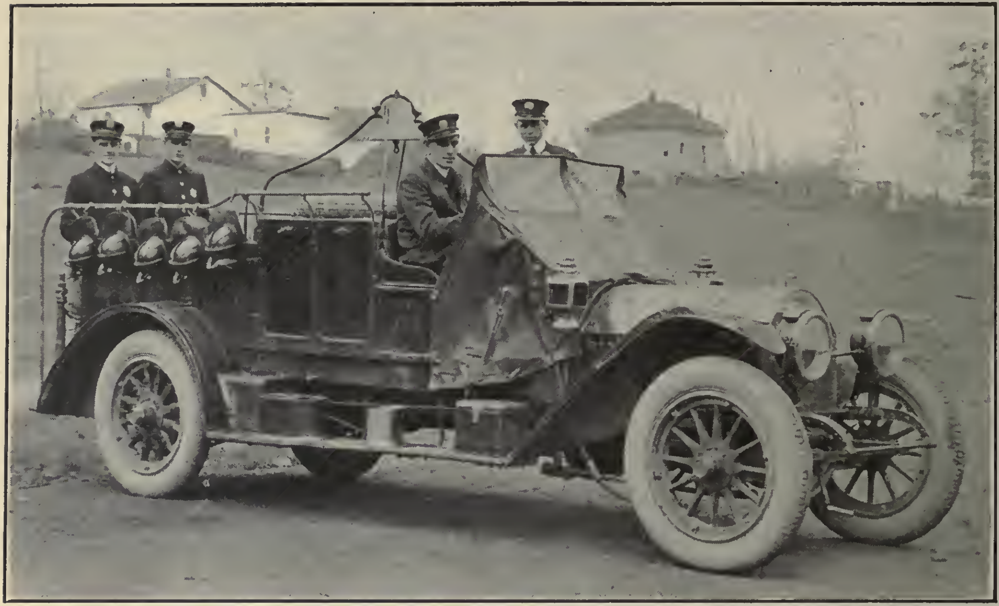
In the article, "Refrigeration in Its Relation to the Municipal Power Plant," by Prof. J. V. Martenis, which appeared on page 149 of the August issue, we wish to correct the following errors which have been called to our attention:

On page 149, second column, 13th line, the word "impossible" should read "possible."

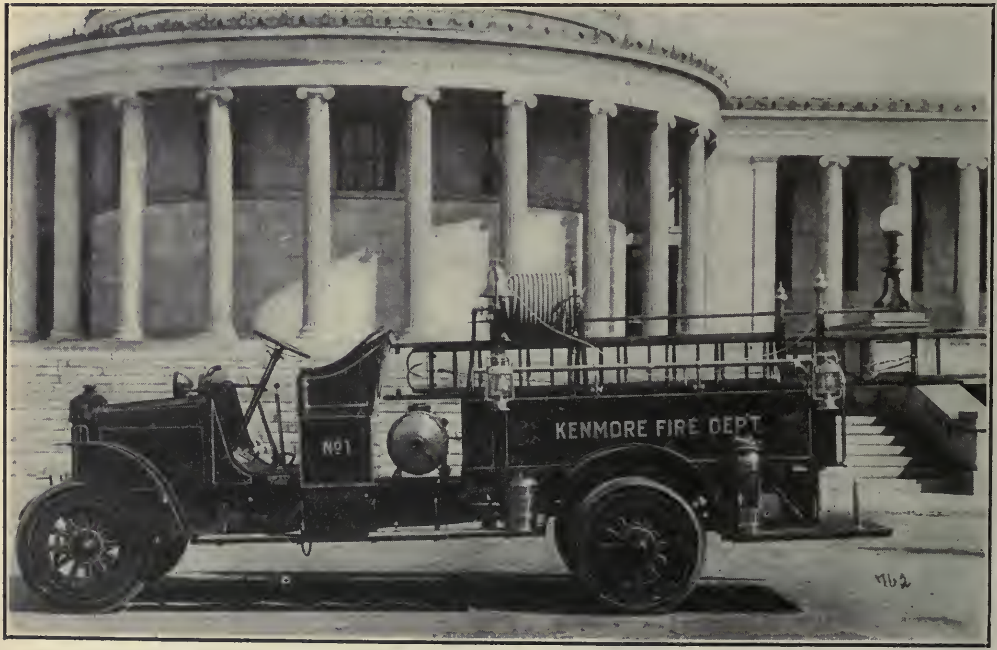
On page 150, first column, 35th line, the word "absorption" should appear after "ammonia."

On page 150, 46th line, the sizes should read 10 x 12 feet x 30 inches.

Motorizing Municipal Departments Has Increased Their Efficiency



THE WALLINGTON, N. J., FIRE DEPARTMENT LOCOMOBILE TRUCK EQUIPPED WITH BRAENDER TIRES



A "NORTHERN" EQUIPPED FIRE TRUCK USED BY THE VILLAGE OF KENMORE, N. Y., WITH FIRESTONE TIRES

SERVICE MOTOR TRUCK ON HEAVY HAULING JOB IN ROAD WORK

ELGIN MOTOR GUTTER SWEEPER REMOVING THE LEAVES AND DIRT FROM THE GUTTER OF A BRICK PAVED STREET

In the photo above the gutter sweeper is being followed by an Elgin pick-up sweeper. The combination cleans one-half of the street thoroly in one trip, and finishes the job on the return.

What Type of Tire?

An Analysis of Tire Equipment for Motor Fire Apparatus

By I. E. Davies

WHICH type of tire is best suited for fire apparatus—solid, pneumatic, or cushion—is a question that is being considered by municipal and fire department officials as well as manufacturers of fire apparatus and tires.

To discuss the question properly and intelligently, certain basic facts and conditions must be clearly understood; first, what types of tires are available; second, the apparatus to be fitted; third, the road conditions; fourth, the operating conditions, speed, length and number of runs; fifth, ultimate cost of operation.

Types of Tires Available

There are but three distinct types of tires manufactured: pneumatic, cushion, and solid, or "hard," tires. All tires now on the market belong to one or another of these three types. Each type has a particular field to which it is best suited and in which it will give the most satisfactory and efficient service.

For the purpose of clearly understanding the proposition, let us divide pneumatic tires into two separate and distinct classes—passenger car, and commercial car, or truck, types. These classes may then be divided into two other divisions each, namely, fabric and cord construction.

The passenger car type of tire was developed to meet a condition brought about by the introduction and development of the higher speed motor vehicle. To accomplish the desired results and after many experiments, the side walls of the casing were built as light as possible, consistent with safety and good service, to eliminate the effects of friction and heat generated by the rapid and frequent flexing or bending of the tire when running, especially in touring and long continuous runs or over rough, uneven roads at reasonably high rates of speed.

For comparison: A piece of No. 10 wire cannot be bent as rapidly, frequently, and easily as a similar length of No. 21 wire, which is but half the diameter; because of its greater diameter it exerts greater resistance to the flexing, generates more heat, and breaks sooner as a result.

Commercial, or truck, pneumatic tires were designed for heavy duty at a more moderate average speed and shorter continuous runs than the passenger type. They therefore have heavier side walls and thicker threads, which resist the strain of the load and are not affected by heat generated by friction and flexing, because the flexing is not so rapid as to prevent the proper radiation of such heat as may be generated and the rate of speed at which they run is lower.

Cushion tires occupy a middle ground between the pneumatic and solid types. Their development was in response to a demand for a tire free from the usual pneumatic tire troubles, namely, punctures and blowouts. The resiliency of the pneumatic type has never been questioned, and it was a strong requirement in the demand for the new type. Solid tires eliminated the troubles of punctures and blow-outs, but did not have the cushioning quality necessary to absorb the road shocks and to eliminate vibration. Therefore the cushion tire is a type neither as resilient and speedy as the pneumatic tire nor as durable as the solid, but it has to some extent reduced the troubles experienced with both types.

Solid, or hard, tires are the heavy-duty type. Their best services are realized when run at moderate speeds.

To obtain the best service from tires of any type they must be of sufficient size to carry the maximum load, must not be overloaded, and must be given reasonable care.

The Apparatus to Be Fitted

In the fire service eight distinct types of apparatus are used, not all necessarily in any one city or department. They are the chief's car (a passenger car), the straight chemical, the combination chemical and hose truck, the combination chemical hose and pumper, the heavy pumper, the service car or truck, the tractor, and the aerial truck.

Each of these cars is designed for a special service. Each was built to meet certain conditions and demands. No one type of tire can successfully meet all conditions created by the numerous types of vehicles and service to which they are applied.

The Road Conditions

Road conditions are as important in the selection of the type of car as in the choice of tires. Road conditions vary in every hamlet, village, town or city, in accordance with both local and geographic conditions. Tire traction is lessened or increased by road conditions. One tire may give excellent traction on hard surface roads but fail utterly in sand or heavy clay roads in wet seasons. This is one of the most important factors to consider in choosing both truck and tires.

Operating Conditions

Operating conditions cover speed required, length and frequency of runs. These conditions sometimes neutralize and sometimes exaggerate other phases. If one type of tire or car would give maximum service in a restricted district where low speed and short runs at frequent intervals predominate, it might not give equally satisfactory service where large areas have to be covered under similar road conditions, because of the need of greater speed for a longer period.

Ultimate Cost of Operation

Initial cost should not be the deciding factor in the purchase of either tires or car. Ultimate cost is a much better basis to use in making a decision. A low initial cost tire frequently proves to be the most expensive in the end, on account of its being contributory to other items of expense, such as mechanical repairs, which would be eliminated by the correct type even at a higher initial cost. On the other hand, the use of a high initial cost tire might not prove as economical a purchase if improperly applied, and might be compared to the wearing of a silk shirt by a ditch digger at his work. A cotton shirt would be more economical, give better service and satisfaction, even tho its initial cost were much less.

As a general outline of types of cars, road and operating conditions, and a basic recommendation of tire equipment, the following is suggested:

Chief's cars (passenger cars),—pneumatic tires.

Straight chemicals, combinations, and service trucks up to and including 14,000 pounds total weight, ready for service, covering wide areas over ordinary roads at from 25 to 35 miles per hour, or occasionally over muddy or deep sand roads,—pneumatic truck tires; same trucks over hard-surfaced roads only, at a lower speed,—either pneumatic or cushion types.

Heavy pumping engines and tractors which seldom leave pavement or hard-surface roads, operating at low speeds,—cushion or solid tires.

Aerial trucks,—solid tires.

Tires for Fire Apparatus in Small Municipalities

Smaller towns and cities, where ordinary dirt roads or deep sand predominates, or where there are heavy, deep snow falls, should invest in the lighter types of apparatus, and will find the use of pneumatic truck tires an assurance of ability to respond promptly to alarms, regardless of road or weather conditions, because of their superior traction. They do not cut into soft ground or snow, because of their wide surface, and they make a hard path for themselves even under these adverse conditions.

There can be no hard and fast rule as to which type of tire—pneumatic or solid—is the proper equipment, using it as a standard by which all cities and fire departments shall guide themselves, for local conditions are the greatest determining factor. Each city and its officials should avail themselves of the expert knowledge of transportation engineers, so that the aim of "lowest ultimate cost," or, in other words, *service,* may be realized, to the benefit of all concerned.

FIRE PROTECTION IS PURCHASABLE.
IT REQUIRES ONLY TRAINED MEN,
DEPENDABLE EQUIPMENT AND
ADEQUATE PUBLIC SUPPORT.

The Advantages of City and County Consolidation

By George C. Sikes

Chicago Bureau of Public Efficiency

THE needs of every large American community include unity and simplicity of government and the short ballot. In large centers of population the case for city and county consolidation is incontrovertible. It is only a question of overcoming public inertia and the opposition of entrenched groups of job-holding politicians.

Experience With Consolidation

Wherever tried, city and county consolidation has been entirely beneficial to the extent that the idea has been carried out. Cleveland's plan of thoro-going consolidation is the logical and proper one, and it should get results. The trouble is that communities making the trial have only gone part way in the direction of unity, simplification, and the short ballot. San Francisco was one of the first communities in the country to merge its city and county governments. The merger took effect in 1856. While the city and county of San Francisco have a single legislative body instead of a city council and a county board, one assessor instead of two, one auditor, one treasurer, etc., that community still continues some needless duplication and elects too many officials. There are two law departments for the combined city and county government, with an elective district attorney as the head of one and an elective city attorney as head of the other—an illogical and absurd situation. There are both a sheriff and a city police department. The ballot is long, many purely administrative officials being chosen by popular election. Board-headed departments are numerous in San Francisco, whereas administrative departments should be single-headed.

Other communities having no separate county government, such as St. Louis, Baltimore, and Denver, have failed, like San Francisco, to carry the policy of unification and simplification to the desired limit. At the present time Denver has one of the simplest governments of all large American cities, with the shortest ballot. The money savings and gains in efficiency in Denver have been especially marked.

Not a Local Movement

The movement for unification of local governments is countrywide. Years ago New York City secured a partial merger of city and county governmental activities. When Greater New York was created, however, the counties within the enlarged municipality could not be merged, so that we have in that community the spectacle of five county governments within one city. A report made by New York City officials shortly prior to the meeting of the last New York State constitutional convention pointed out that the merger of the county governments within New York City would effect a saving in excess of $1,000,000 a year. A recent report of the Chicago Bureau of Public Efficiency on "Unification of Local Governments in Chicago," showed that complete unification of local governments in that community would result in money savings in excess of $3,000,000 a year, to say nothing of other benefits of even greater importance. A report of the Taxpayers' Association of California on the need for city and county consolidation for Los Angeles pointed out that the money saving from consolidation would be approximately $2,000,000 per year.

Local Home Rule

The arguments in favor of the policy of city and county consolidation are too numerous to recount in full. American cities cannot obtain or continue to have home-rule in many of their most important activities unless the local governments naturally comprising one metropolitan entity are brought together in one government. Problems of sewage, water-supply, transportation, city planning, etc., cannot be properly handled by a city government that does not cover the entire metropolitan area.

ACKNOWLEDGMENT.—From Civic Affairs, published by the Civic League of Cleveland.

News and Ideas for Commercial and Civic Organizations

Pontiac's Solution of a Housing Crisis

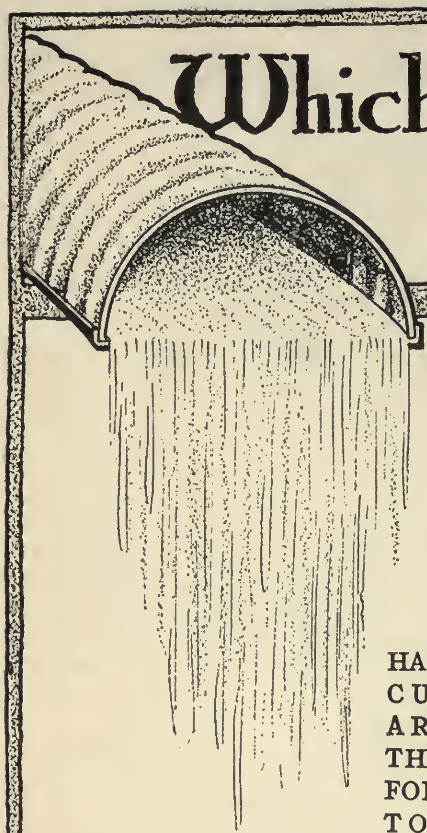
PONTIAC, MICH.—With large additions to factory plants being rushed to completion and with a program for greatly increasing the working force in at least two of the city's largest industries, Pontiac has faced, since the beginning of the year, a decided shortage of houses. The need has been considerably agitated since March, altho individual building was somewhat spurred on by the fact that the General Motors Corporation undertook a building program of its own which calls for the completion of 500 houses this year. Not until July 15, however, was any definite figure set by local manufacturers as to the actual number of houses which would be needed when their increased production plans had been completed. On that date it was announced by them that about 1,400 houses, in addition to those being built by the General Motors Corporation, would be needed to take care of the requirements of the four largest factories alone.

To determine just how far the city was going in the matter of meeting this need, the Housing Committee of the Board of Commerce made a one-day survey of the city in which the number of new houses under construction this year was ascertained. The result showed that slightly more than 400 were under construction by individual builders. With 1,400 needed and only 400 in sight, it was apparent that something must be done if the city was to keep faith with the manufacturers. Accordingly, a Housing Campaign Committee was formed, composed of the most prominent men in the city, and a campaign to stimulate building on a much greater scale was inaugurated.

A Board of Commerce membership meeting was called, at which plans for houses of different sizes and prices were exhibited. An easy way to finance the building of one or more houses was carefully explained. The manufacturers were called upon again to state their plans definitely and the need for more houses, and then pledges from individuals were called for. The result was far beyond the expectations of the most hopeful. Signed pledges were secured for over 600 houses, the construction of which is to be begun before January 1 next. Because many individuals who were known to be amply able to build were not present at the meeting, it was decided to follow the meeting with a canvass to secure additional pledges. Accordingly, a prospect list of about 300 names was carefully prepared and about 50 men undertook a one-day drive. In this way, over 200 additional pledges for homes were secured.

The slogan of the drive for pledges was "2,000 New Homes for Pontiac—It Can Be Done—It Will Be Done." Window cards bearing this slogan were widely distributed thruout the city and the local press made much of the slogan. A Housing Publicity Committee prepared a leaflet setting forth the objections which team workers might encounter, and also had distributed leaflets describing a way in which the financing of building operations could be facilitated thru the banks and the local Mortgage Investment Company. The latter has been of great value in stimulating the building of houses. Altho only three months old, it has already loaned money to 75 builders and has financed over $200,000 worth of house contracts.

That the campaign did not produce many pledges to build by people who had no intention of fulfilling their pledges is evidenced by the fact that in less than three weeks after the pledging of the first 600 houses, contracts had been let or were being negotiated for nearly 500 houses. Undoubtedly there will be some shrinkage, but it is generally felt that the drive produced results which were decidedly worth while, and it is certain that a great many people



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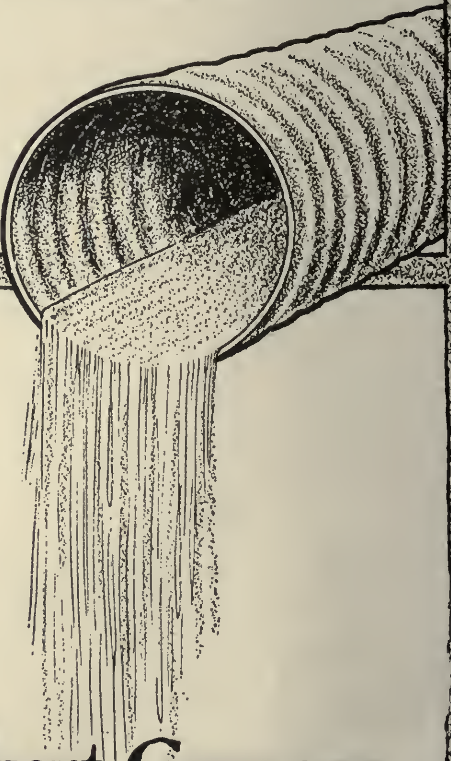

ROUND Riveted Full Circle Corrugated Metal Culverts have come into almost universal use all over the country. Their value is well understood for general use on main highways; they are the best and are invaluable on secondary roads where the service demanded is much greater. Corrugated metal culverts made of any grade of material, are much more easily handled and installed than any other form of culvert construction; but where permanency has to be considered, it is well to have them of the best grade galvanized iron sheets that are on the market. Our "Genuine Open Hearth Iron" is the best. Send us your address so we can send you further particulars.

The Newport Culvert Company

NEWPORT 524 West 10th St. KENTUCKY
Chicago Office—Majestic Building, Chicago, Ill.

are now building who would not be doing so had the Board of Commerce not conducted the campaign and given publicity to the fact that houses were very badly needed if Pontiac was to take advantage of the opportunity for growth which was being presented. Two concrete results of the campaign were the announcement by the Wilson Foundry Company that it would employ 2,000 additional men by January 1 because the housing facilities for them now seemed to be assured, and the decision by another company to remain in Pontiac in spite of the fact that it had previously announced that it might leave because of the housing situation.

The surprising thing about the campaign was the ease with which men could be induced to build when once the urgent necessity was presented to them and when they were shown how a building project could be financed thru the banks and the Mortgage Investment Company. Every one seemed to catch the enthusiasm of the campaign, and many people who had never considered building are now trying to figure out a way to do so. Every day sees a number of visitors at the Board of Commerce headquarters who wish to secure information as to how they can finance the building of a house.

A total of 2,000 new houses for Pontiac this year now seems assured, and, to quote the *Pontiac Daily Press*, "The Housing Campaign Slogan must now be changed from 'It Can Be Done—It Will Be Done' to 'It Is Being Done.'" By the end of the present year, Pontiac believes that it will be able to announce, "We were given the job of building 2,000 houses—It Has Been Done."

C. W. OTTO,
Managing Director, Pontiac Board of Commerce.

Bradford, Pa., Raises $90,000 for a Road in New York State

BRADFORD, PA.—For several years Bradford had hoped that the New York State Highway Commission would build an improved road from the state line, two miles north of Bradford, to an improved road in New York State on the Allegheny River, a distance of about nine miles, which would put Bradford in touch with the neighboring towns of Salamanca, Olean and Buffalo, and all of the New York road system. The citizens had a settled conviction that now that the war was over the road would be built, when it was learned that because of New York's main-line roads being in such a bad condition as a result of war hauling and lack of repair, no help could be expected from that direction. Bradford felt itself sinking again into a sea of mud. It was intolerable.

However, a little experience the year before in raising over $9,000, nearly half the cost of two miles of slag road, had planted the germ of a greater endeavor, and it was finally decided that Bradford itself should raise $90,000 with which to built a slag road thru the nine miles of mud in New York State. The Board of Commerce appointed a committee to raise the money, and on April 17 last the men set forth. They were somewhat alarmed at their own daring at first, but within a few days, under the spirited leadership of Otto Koch, they became certain of a successful outcome.

The committee well understood that in a town of only 16,000 people every prospect would need to subscribe his full share, and each prospect was made to feel that he was responsible for the success or failure of the whole undertaking. Within a short time, subscriptions amounting to $59,000 from 59 subscribers were announced. Later the total ran up to about $100,000, half of which was in amounts of $1,000 or over, and $20,000 in $500 amounts.

When the money was nearly raised, one of the committee suggested that it be offered to New York State as an aid toward the building of a cement instead of a slag road, whereupon the members of the committee, not too hopefully, journeyed to Albany and offered the New York State Commissioner of Roads $10,000 a mile for a cement road. It required considerable effort to convince the Commissioner that the offer was bona fide and to allay his qualms about the dignity of the state's accepting the money, and after those questions were disposed of, the conference settled down to the details of quick construction, the legality of accepting the money, Federal aid, etc. Those points were all decided favorably. State Commissioner Green accepted the committee's offer, the money was soon collected and placed at his disposal, and he has promised that a contract for about half the job will be let by August 4, 1919.

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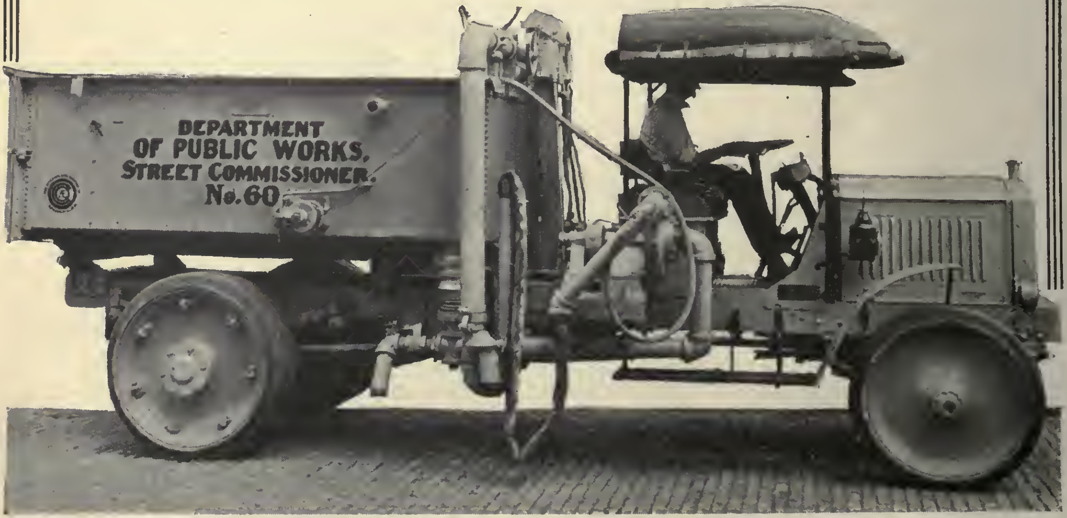

By this rapid shifting of the plans, the subscribers are getting approximately four-fold value for their money, and Bradford will soon be released from its bondage of mud as a result of the greatest voluntary effort it has ever put forth.

EARL S. WEBER,
Secretary, Bradford Board of Commerce.

Public Improvements Meeting Produces Results

New Castle, Pa.—The New Castle Board of Trade recently held a Public Improvements meeting which was undoubtedly the best meeting of the year, judging it from the standpoint of its practical results. The program consisted of three addresses of from ten to fifteen minutes each made by public officials. A member of the City Council discussed "Civic Improvements"; the Superintendent of Schools presented "Our Need for Additional School Facilities"; and the chairman of the Board of County Commissioners spoke on "Roads and Other County Improvements."

Each address presented a thoro analysis of the subject assigned. The paper on Civic Improvements showed the need of issuing bonds to the amount of $350,000. The discussion of the needs of our school system proved the necessity of expending a half-million dollars in a program of construction covering a period of five years. The study of the question of good roads showed that $800,000 would have to be raised by a bond issue in order to defray the county's share of necessary road construction. A general discussion followed, in which it was demonstrated that the increased millage in taxation to secure the needed improvements would place a lighter burden upon our citizens than the majority of them had anticipated.

A resolution was passed endorsing the program for bond issues by the city, the school district and the county, in the amounts above named. Within three weeks after this meeting, the City Council, encouraged by the action taken at the meeting, voted an immediate bond issue of $100,000, which will no doubt be supplemented by further issues as the money is needed. The County Commissioners soon thereafter issued a public statement pledging themselves to the people to bond the county for $800,000 for the construction of essential arterial highways, and agreed to submit to the voters of Lawrence County an additional bond issue of $1,200,000, which, with state aid, will give us 84 miles of concrete road.

Prior to this meeting, the Board of Trade had resorted to various forms of publicity in an effort to secure affirmative action in these matters, and, while the responsibility for action cannot be fully accredited to this meeting, undoubtedly the vigorous endorsement given supplied the impetus and sanction necessary, and removed any doubt that had existed in the minds of the public officials. It is expected that the action taken at that meeting will also tend to speed up the construction of additional school buildings.

JOSEPH W. KENNEY,
Commissioner, New Castle Board of Trade.

"Tiny Town" Gives Impetus to Building Campaign

Springfield, Mo.—An important feature of the "Build Now" campaign conducted by the Springfield Chamber of Commerce early in the year was the "Tiny Town" project, which was originated and put into execution by W. H. Johnson, of Springfield, the local director of publicity for the "Build Now" campaign. The plan had the hearty support of the school authorities. Superintendent W. W. Thomas strongly believes in teaching boys and girls, along with their regular studies, how to become real men and women, and how to acquire homes and assume the responsibilities of citizenship.

The Superintendent inaugurated the Tiny Town movement in the schools by interesting the pupils first in civil government. He allowed them to hold an election, the students in each school first deciding by a general vote of the entire school the question of woman's suffrage—that is, whether the girl students should be allowed to vote for the various offices to be filled, for Tiny Town must have a mayor and a full set of city officials. This burning question was voted upon unfavorably, sad to relate from the standpoint of the girls. A campaign for the adoption of a commission form of government was then carried on by the students. Their political announcements were published in the daily papers just as before a regular election. The officials elected had charge of the administration of Tiny Town during the period of its exhibition in Convention Hall, when the prizes were awarded and the public had its

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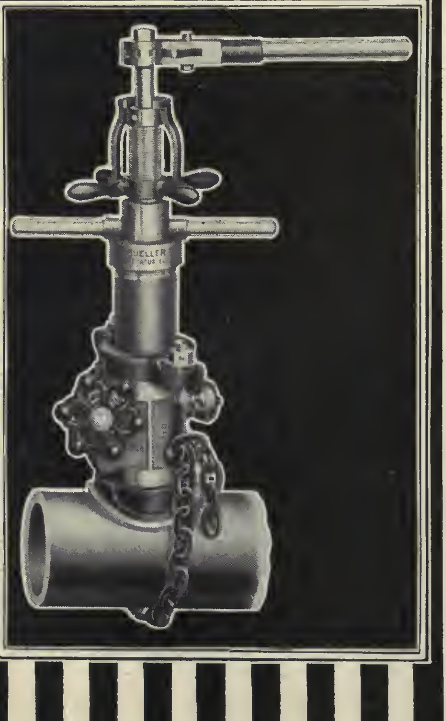
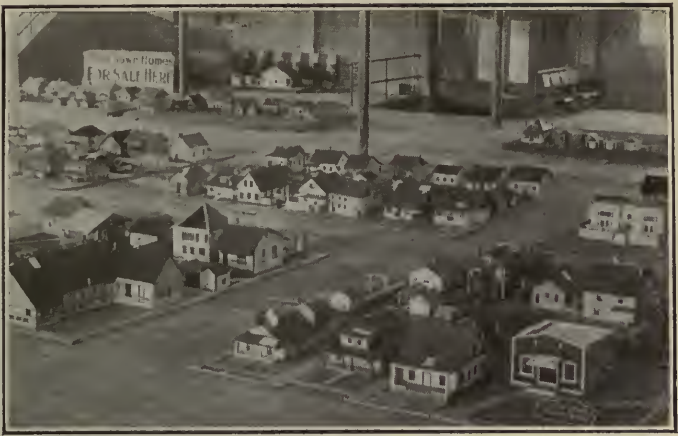


first view of the finished city completely built in ten weeks by public school pupils under the direction of their manual training instructors.



A SECTION OF THE "TINY TOWN" EXHIBIT, SPRINGFIELD, MO. A COMMUNITY BUILDING APPEARS IN THE LOWER LEFT-HAND CORNER

There were, all told, about 1,000 houses; and they were built by nearly as many students, the "Build Now" propaganda was carried into about 1,000 homes. The children of eighteen public schools participated, so that practically every precinct and block in the city was represented. As prizes were awarded to the schools and individuals for the best work, it can readily be imagined that the progress of the contest was a subject of daily discussion in the family circle.

The building of Tiny Town began on May 4, 1919, and continued until June 25, when the completed city was placed on exhibition and cash prizes aggregating $500 were awarded. At the close of the exhibition a regular auctioneer sold to the highest bidders the houses of all the boys who wished to dispose of their buildings, and many of the prize-winning structures were displayed in the windows of the leading stores of the city.

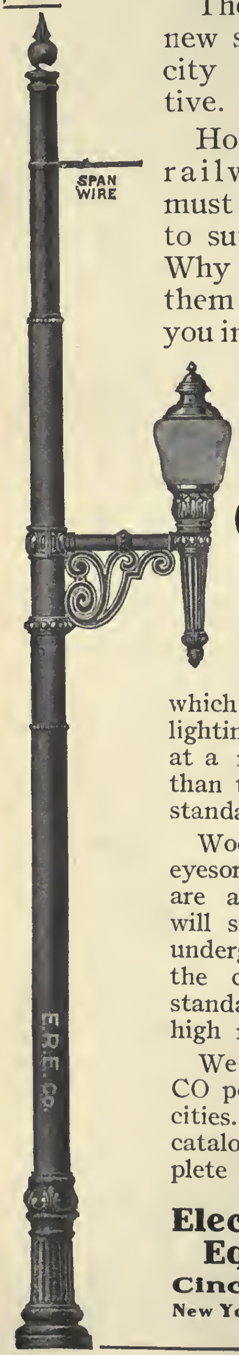
It will be noticed in the accompanying pictures that the houses are all different in design and that they closely follow, in miniature, the general designs of frame house construction. The houses are built on the scale of one-half inch to the foot. The complete city is based upon 155 acres, reduced to the same scale. It has properly laid out streets, parks, etc., with real grass and flowers.

One of the publicity and promotion possibilities of the Tiny Town enterprise was developed thru a poster contest conducted for the 600 or 800 students not engaged in the building ontest, for which the merchants donated prizes of merchandise or money.

As the house-building contest was open only to the manual training students, the majority of whom are boys, an interior home decoration prize contest for the several hundred high school girls was inaugurated. The girls made the interior

A NEAR VIEW OF SOME OF THE MINIATURE DWELLINGS IN COURSE OF CONSTRUCTION

Save Money on Your Street Lighting



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FREE MANUAL

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Canton, Ohio

furnishings and decorations for the houses built by the boys.

The younger children were given an opportunity to do their bit for the home-owning movement by pasting into scrap books cut-outs from magazines and books showing designs of interiors, furniture, etc. The books each contained twelve pages and had printed captions at the top for the various rooms of a house in their regular order. Prizes were awarded for the best books.

It should be stated that all the work involved in the various contests, except the actual building of the houses, was done at the homes of the pupils, for two reasons: First, to get the home folks interested, so that they would talk about house-building and home-decorating, and, second, in order not to break into the regular studies, because the children were likely to feel more interest in Tiny Town than in studying about why and when Caesar crossed the Rubicon.

Whether entirely due to the "Build Now" advertising and Tiny Town or not, Springfield is enjoying an unprecedented building boom. The Tiny Town idea is to be carried out next year on a larger scale, this time in the open. A ten-acre tract will probably be devoted to plotting and landscaping the Tiny Town of 1920.

LOUIS PLANK,
Secretary, Springfield Chamber of Commerce.

$4,500,000 for a Memorial Auditorium and Other Public Improvements in Birmingham

Birmingham, Ala.—On August 18 this city, by large majorities, voted to bond itself for $4,500,000 for a group of public improvements which will further substantiate its claim of being "the leading city of the South." The voters also made liberal provision for the support of one of the projects. In detail, the propositions as submitted to the people were as follows:

1. Three-mill district school tax
2. $1,000,000 bond issue for high schools
3. $2,000,000 bond issue for other schools
4. $500,000 bond issue for an auditorium
5. $500,000 bond issue for a city hall and public library
6. $500,000 bond issue for fire stations, fire equipment and a fire alarm system

The three first named were not strictly new projects. All had been acted upon before and carried by safe majorities, but legal complications were discovered in the case of one of them, and in another the interest rate of 4½ per cent on the bonds was too low to float them. It was necessary, therefore, to resubmit the proposals. Since the last time they were voted on, conditions have changed in some respects, and there was a genuine element of doubt as to whether they would carry.

The three last-named items were strictly new, tho there had been a popular demand in Birmingham for a long time for a publicly owned auditorium. Of these three issues, the greatest doubt existed as to whether that for a combined city hall and public library would carry.

While the five City Commissioners and a considerable group of the most influential men in the city were reasonably certain that the six propositions would be carried, there was enough doubt about the outcome to make it seem wise to conduct a systematic campaign in their behalf. This was thought especially desirable in order that the majorities might be emphatic, and, above all, because of the special interest in the auditorium project.

Several months ago the Birmingham Chamber of Commerce announced its intention to give Birmingham an auditorium which would be a fitting memorial of the war services of Jefferson County and the city. This promise struck such a popular note that steps were taken at once to appoint a committee of about forty men and women to develop and handle the plans, with the active assistance of the Chamber of Commerce.

At that time there was no suggestion of the additional propositions as they were submitted to the voters. When the City Commission brought forward the proposal of bond issues for schools, a new city hall and library, and fire department needs, an agreement was reached with the Auditorium Committee to include $500,000 for such a structure. Thereupon the Chamber of Commerce financed and the Auditorium Committee handled a regular campaign of publicity in behalf of the six proposals named above, giving them about equal attention. The campaign was directed by the American City Bureau, which had handled a few months previously a reorganization campaign for the Chamber of Commerce.

Has Your City a Public Swimming Pool?

Like McKeesport, Pa., it should have one, where thousands, young and old, can enjoy a refreshing, invigorating swim.

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Birmingham is thus assured of the erection of a group of needed new school buildings; a tax large enough to support the schools adequately; a new building in which to house its public library and municipal officers; stations and equipment which will make its fire department one of the best in the country; and an auditorium which will rank among the finest anywhere.

The auditorium has been a subject of special interest to the people of Birmingham from the beginning. Jefferson County and the city made wonderful records in war service in the provision of both men and money. Since the signing of the armistice, there has been a keen desire to erect a suitable memorial, and to the credit of these loyal people it ought to be widely known that no other form of memorial has ever had such popularity as one the people could use.

The Auditorium Committee announced some time ago that after the voters had approved of the bond issue for $500,000, it would make an effort to raise $250,000 more by popular subscription. This sum added to the $500,000 will provide a place of assembly such as no other city in the South can boast. The time set for this supplementary campaign is October, and there is no doubt that the money will be raised.

C. E. JENKS,
Acting Manager, Birmingham Chamber of Commerce.

"Pigs Is Pigs" in La Crosse, Wis.

La Crosse, Wis.—Early this summer the La Crosse Chamber of Commerce held its second annual Pig Club dinner, which was the occasion of much happiness on the part of the twenty-two successful contestants for pigs among the boys and girls in the surrounding country. Besides the young people, the guests included their parents, their teachers and the members of the Merchants' Bureau of the Chamber of Commerce who awarded the prizes. The accompanying picture was taken after dinner, and shows each prize-winner seated on a crate containing his or her pig.

The first of these contests was conducted in La Crosse County by the La Crosse Chamber of Commerce last year, and was very successful. The same course of procedure was adopted this year as last. Letters were sent out to the teachers in the eleven county school districts explaining the plan and asking entrants to apply for blanks and rules of the contest. Any boy or girl between the ages of ten and nineteen years was permitted to compete. It was desired to locate the boy or girl best adapted to handling a pure-bred pig, also those possessing the greatest interest in pigs and the most knowledge of good swine-raising methods. Each teacher, upon receipt of the application blanks for the contest, was asked to enroll as many boys and girls in her district as possible, and to forward the enrollment cards, properly filled out, to the Secretary of the La Crosse Chamber of Commerce. Upon receipt of the filled-out blanks, the Secretary mailed to the teacher in each district a set of ten questions pertaining to pigs and pig-raising. Then the teachers had the pupils in their respective districts assemble at a certain time and answer the questions. The papers containing the answers were forwarded to the Secretary of the Chamber of Commerce, who turned them over to the committee that had been appointed to correct the papers. The scholars showing the best knowledge of pigs and pig-raising were selected from each township and these boys and girls formed the Pig Club.

Over 300 entered the contest in 1918 and eleven young people won prize pigs. This year the number of contestants was doubled and twenty-two boys and girls each won a full-blooded young porker. When the prize

THE PRIZE-WINNERS IN THE PIG CONTEST CONDUCTED BY THE LA CROSSE CHAMBER OF COMMERCE SEATED ON THE CRATES CONTAINING THEIR PRIZES

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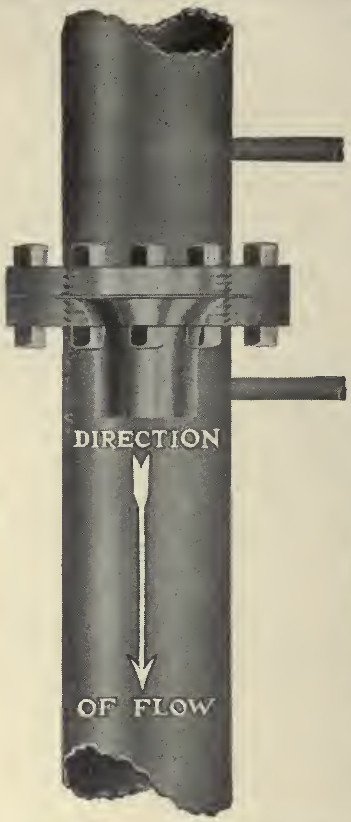

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Niagara Falls, N. Y.
*Oklahoma City, Okla.
Omaha, Neb.
Philadelphia, Pa.
Pittsburgh, Pa.
Portland, Ore.
Providence, R. I.
Richmond, Va.
Rochester, N. Y.
St. Louis, Mo.
Salt Lake City, Utah.
San Francisco, Cal.
Schenectady, N. Y.
Seattle, Wash.
Spokane, Wash.
Springfield, Mass.
Syracuse, N. Y.
Toledo, Ohio
Washington, D. C.
Youngstown, Ohio

*Southwest General Electric Company. For CANADIAN BUSINESS refer to Canadian General Electric Company, Limited, Toronto, Ont.
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34-C-15

pig becomes the mother of a litter of piggies, the owner of the prize pig is obliged to give one of the babies to the merchant who awarded the prize pig. The merchant then awards the new little pig to some other boy or girl in the next contest, and it is planned to continue this process indefinitely, —that is, as long as the Pig Club is in existence.

JAMES R. KINSLOE,
Executive Secretary, La Crosse Chamber of Commerce.

$90,000 Fund for Farm Development Bureau of Memphis Chamber of Commerce

Memphis, Tenn.—One of the most important bureaus of the Memphis Chamber of Commerce is the Bureau of Farm Development, which raised a fund of $90,000 this spring for the purpose of increasing the agricultural prosperity of the surrounding territory. The Bureau anticipated its needs for the next three years in raising this sum of money, which provides it with a working capital of $30,000 for each of the years of 1919, 1920 and 1921.

The promoters of the movement realize the obvious fact, too often overlooked, that if the territory surrounding the city is made prosperous, the city itself will be prosperous, and while it is putting forth worthy efforts to make the farmer's life a happier one, it is also assisting to build a more prosperous Memphis. On account of the geographical location of Memphis, its trade territory stretches into the states of Arkansas and Mississippi, as well as Tennessee. The bankers and business men in every village and town in the district are coöperating in their home communities with the Farm Development Bureau, and this support is one of the principal reasons for the success of the movement. The agricultural colleges of Tennessee, Arkansas and Mississippi are also coöperating. One of the best agricultural experts in the United States is devoting all his time to directing the movement. The lines of agricultural work followed are varied to meet the conditions, needs and possibilities of each farm district in the territory.

It is generally conceded that the way to make any industry, any method or any thought a permanent and effective factor in national life is to introduce it into the schools. The Farm Development Bureau is persuading the rural school authorities to have the courses of study and methods of teaching in the country schools adapted to the highest development of country life and increased farm production. The Bureau is also fostering the organization of clubs for the growing of corn, cotton, peanuts, alfalfa, pigs, calves and colts; and the girls are being organized into canning, poultry, sewing, cooking and flower clubs.

The Bureau issues a weekly sheet entitled "Market Information and Exchange List" for the farmers' benefit. This contains market quotations and items of interest regarding approved marketing methods, coöperative shipping, inquiries for certain farm products, etc. This bulletin keeps the farmer abreast of the times concerning the lines in which he is interested.

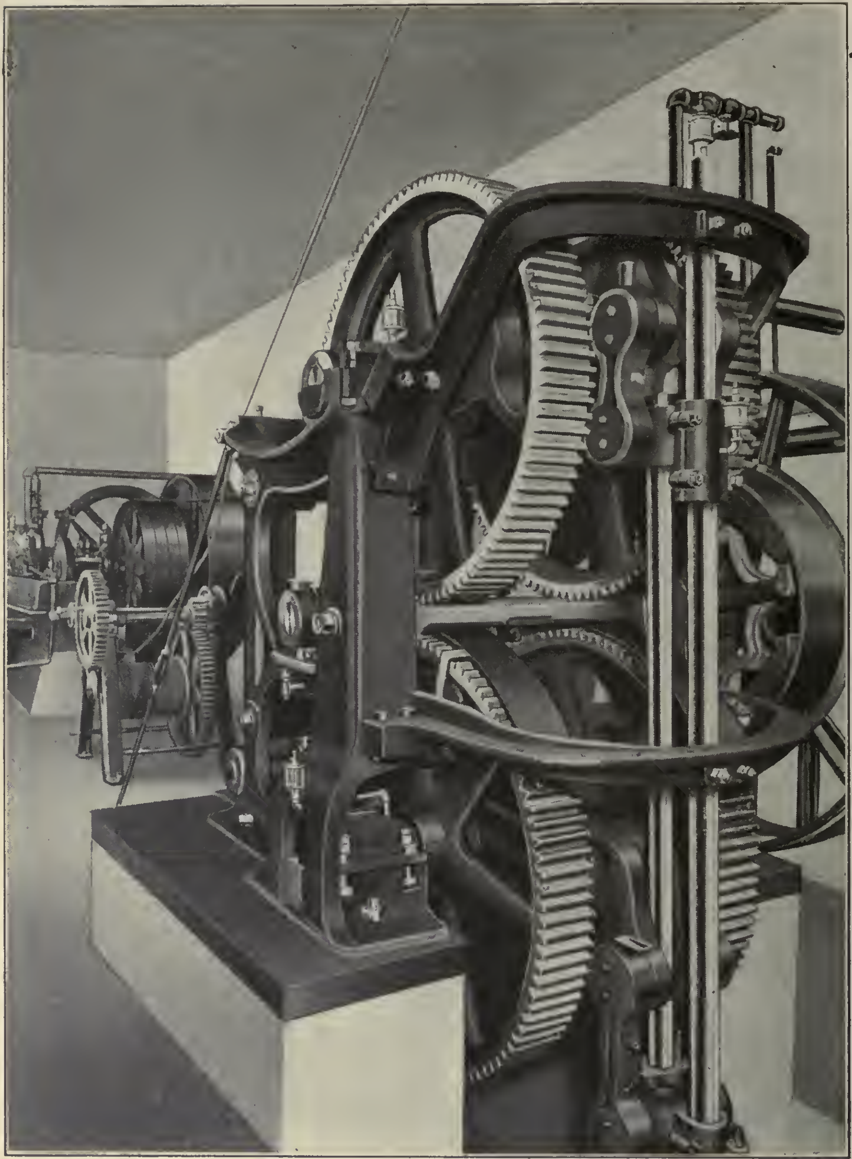
Bureau of Farm Development, Memphis, Chamber of Commerce.

Summer School of Community Leadership Doubles in Size

Three hundred men and women representing chambers of commerce and other civic-commercial organizations in thirty-three states and four Canadian provinces assembled on July 14 at the little mountain resort of Eagles Mere Park, Pa. From California, Texas, Saskatoon, Ontario, Maine, Florida, Alabama, and intermediate points, they came to learn the fundamentals of a new profession.

The growth of this school throws an interesting light on the increasing attention which is everywhere being devoted to the problems of community life, and on the very rapid growth of the profession of community leadership. The first school was held in 1915 at East Dorset, Vt., with fifteen students. In 1916 the number of students jumped to 57, and in 1917 to nearly 100. This number held in 1918, on account of the war, but in 1919, with the resumption of normal activities, the enrollment more than doubled. The same strides that have characterized the development of the chamber of commerce field have marked the growth in numbers of the American City Bureau staff. In 1913, when the Bureau was organized, its field staff consisted of three men. At the present time it numbers considerably over fifty and is constantly making additions.

The purpose of the Summer School has been to equip commercial organization sec-



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retaries to serve their communities better, and to train men who desire to enter the field of community leadership in the fundamental principles on which the successful chamber of commerce of to-day must be built, and in the most approved methods of administration. Besides the study of these general subjects, specific problems likely to be encountered by most civic-commercial organizations were dealt with. A departure from the lecture method of instruction followed in the previous schools was made necessary by the increase in attendance. The student body was split up into nine groups, each numbering over twenty. These groups studied the various subjects in rotation, and came together for the lectures. The Dean of the school was Lucius E. Wilson, Vice-President of the American City Bureau.

In addition to this instruction by senior members of the American City Bureau staff, the students heard lectures by speakers and civic leaders of national repute. Among these were the following:

Howard Strong, Secretary of the Chamber of Commerce, Rochester, N. Y.

Roy S. Smith, Manager of the Chamber of Commerce, Albany, N. Y.

Dean S. S. Marquis, of the Department of Education, Ford Motor Company, Detroit, Mich.

George W. Coleman, President of the Open Forum National Council, Boston, Mass.

Lawson Purdy, President of the National Municipal League, New York City.

J. Horace McFarland, President of the American Civic Association, Harrisburg, Pa.

Perry R. MacNeille, Town Planner, New York City.

Samuel McCune Lindsay, President of the American Association for Labor Legislation, Columbia University, New York City.

Miss Isabel Craig Bacon, Prince School of Education for Store Service, Boston, Mass.

Orrin G. Cocks, National Board of Review of Motion Pictures, New York City.

W. J. Donald, Secretary of the Chamber of Commerce, Niagara Falls, N. Y.

Dorsey W. Hyde, Jr., Municipal Reference Librarian, New York City.

Gaylord C. Cummin, Former City Manager at Grand Rapids, Mich., and now Consultant in Municipal and Utility Problems, with an office at 50 Chambers Street, New York City.

Fred Clayton Butler, Federal Director of Americanization, Washington, D. C.

C. F. Stimson, Special Representative, Community Service, Inc., New York City.

Chesley R. Perry, Secretary of the International Association of Rotary Clubs, Chicago, Ill.

N. R. Peet, County Agricultural Agent, Lockport, N. Y.

Raymond B. Gibbs, Secretary of the Chamber of Commerce, Kansas City, Kans.

Arthur H. Blanchard, President of the American Road Builders' Association and the National Highway Traffic Association, Broadway and 117th Street, New York City.

Homer Talbot, Executive Secretary of the New Jersey State League of Municipalities, Princeton, N

J. Byron Deacon, Director, Department of Civilian Relief, American Red Cross, Washington, D. C.

Henry Gaines Hawn, President of the Hawn School of the Speech Arts, New York City.

Outside of the school sessions, which averaged about seven hours each day, a lively program of sports, out- and in-door, was carried thru, including several baseball games, a big tennis tournament, golf, swimming, a bowling tournament, a chess tournament, a canoe-tilting tournament that held the limelight throut the course, dances, a minstrel show, beach and stag parties, and other forms of entertainment. Altogether, every minute of the day and every evening was well filled, and a splendid spirit of good fellowship prevailed from the start.

New Bulletins

Bluefield, W. Va.—*The Dynamo,* published monthly by the Bluefield Chamber of Commerce.

Fort Dodge, Iowa.—*The Community Builder,* published monthly by the Fort Dodge Commercial Club.

Holyoke, Mass.—*Greater Holyoke,* published monthly by the Holyoke Chamber of Commerce.

Jamaica, N. Y.—*Jamaica Jinjer,* published monthly by the Jamaica Board of Trade.

Reno, Nev.—*Reno & Nevada,* published quarterly by the Reno Commercial Club.

Sydney, N. S. W., Australia.—*Newsy Notes,* published by the Millions Club of New South Wales.

Recently Issued Printed Matter

Attleboro, Mass.—The Attleboro Chamber of Commerce has issued its year book, which contains a report of activities for the year May 1, 1918, to April 30, 1919, also some interesting Attleboro statistics.

Boston, Mass.—"Concerning the Port of Boston" is the title of an illustrated booklet issued by the Boston Chamber of Commerce.

Cincinnati, Ohio.—"The Social Unit—What Is It?" is the title of a pamphlet issued by the National Social Unit Organization, located in Cincinnati.

Fort Scott, Kans.—The Fort Scott Chamber of Commerce has issued a leaflet entitled "Building a Community," in which is given the five-year program adopted by the Chamber in 1916 and a list of the accomplishments three years after its adoption.

Lockport, N. Y.—The July issue of *The Lockport* Leader contains an account of "Some Activities of the Board of Commerce for the First Half of 1919."

Niagara Falls, N. Y.—"Holes in the Road and Holes in the Pocket—A Word to Taxpayers" is the title of a pamphlet issued by the Niagara Falls Chamber of Commerce.

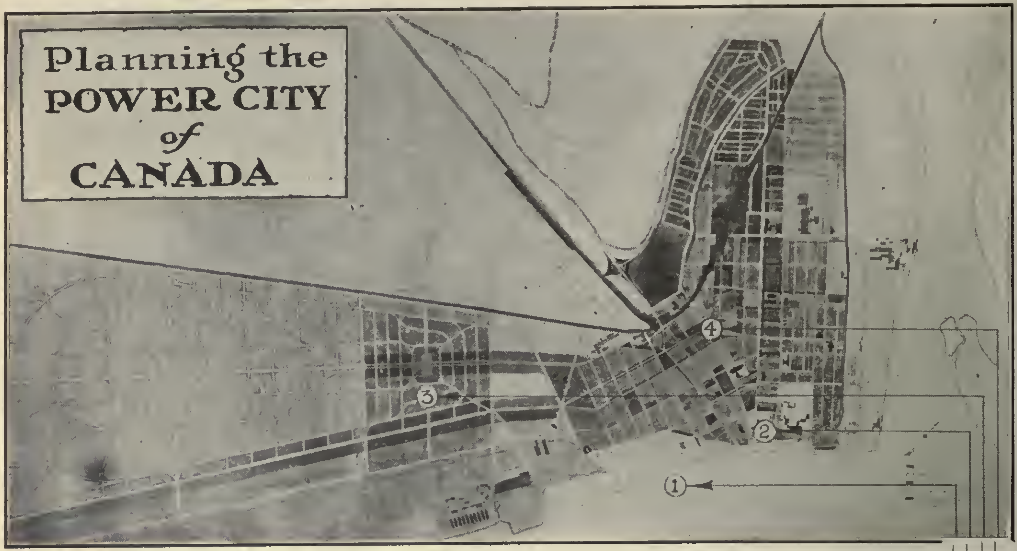
Norfolk, Va.—The Chamber of Commerce-Board of Trade of Norfolk has recently issued two pamphlets, one entitled "Industrial and Commercial Norfolk, Va.,—A Review of Facts and Figures," and the other, "A Travel-Logue In and Around Norfolk, Virginia, In the land of Sunshine and Beauty."

Springfield, Mo.—The Springfield Chamber of Commerce has issued a pamphlet containing the by-laws of the organization, also the list of officers and Board of Governors, and the membership list. Another pamphlet issued by the same organization is headed, "Springfield, Missouri, Invites You to the Year Round Vacation Land of the Ozark Mountains."

Wilkes-Barre, Pa.—The Greater Wilkes-Barre Chamber of Commerce has issued its annual report for the year 1918.

Winnipeg, Man.—The Winnipeg Board of Trade has issued a leaflet entitled "Ten Things You Should Know About Winnipeg."

The Chamber of Commerce of the United States has issued a report of its seventh annual meeting, held at St. Louis, Mo., April 29-May 1, 1919, which contains the President's address, the Board's annual report, financial statements, resolutions, and a list of the Directors.



A STUDY OF THE NEW CITY PLAN

For this city of 30,000 inhabitants a complete city plan and municipal expansion report are now being made to encourage and direct the industrial, civic and physical growth to three times its present size.

IN THE SAME CITY—

1. An intensive study of the possibilities and methods of developing a large harbor business is to be made.
2. Plans are being drawn for a $1,000,000 hotel.
3. At this point land has been laid out and plans completed for a residential addition of 1,000 dwellings for industrial workers.
4. Markings indicate changes recommended in existing streets.

The above work is being carried out by

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Municipal Developers and Town Planners
Designers of Buildings of all Types
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To City Officials and Secretaries of Chambers of Commerce—

Upon request we shall be glad to send you a detailed outline showing the various factors which should be considered in a program of municipal expansion, including (1) economic features in the development of a city; (2) the housing problem; (3) the factors involved in harbor front and inland waterway development and (4) features of a proper city plan.

To those Interested in Any Phase of the Above Service—

We shall be glad to receive inquiries regarding any type of building or engineering design, industrial housing, building appraisals, city planning, community buildings and the planning of sub-division or allotment property.

An attractive architectural reprint "The Town of Perry Point, Md.," will be mailed upon application. This is an illustrated description of a newly built town fully designed by our organization.

THE SERVICE OF ECONOMIC EFFICIENCY

Changes Among the Secretaries

A list of the recent changes and new appointments occurring among the secretaries of commercial and civic organizations thruout the United States.

Readers are asked to notify the Editors of such changes as soon as they occur, in order that the list may be made as complete as possible each month.

TAMPTON AUBUCHON has resigned as secretary of the Louisville Industrial Foundation of Louisville, Ky., to enter the industrial field in a managerial capacity.

ROSCOE C. BANGS has resigned as secretary and treasurer of the Belle Fourche, S. Dak., Commercial Club, to accept a similar position with the Rapid City, S. Dak., Commercial Club.

F. F. BARTH, of Pittsburgh, Pa., has been elected secretary of the Chamber of Comerce at Beaver Falls, Pa., succeeding M. D. Griffith.

O. H. B. BLOODWORTH, JR., is the new secretary of the Board of Trade at Forsyth, Ga.

C. A. BOLTON has resigned the secretaryship of the Mason City, Ia., Chamber of Commerce, to accept the secretaryship of the Winona, Minn., Association of Commerce.

H. H. BOLTON has been selected as the new secretary of the Chamber of Commerce at Gulfport, Miss. Mr. Bolton has been associated with the industrial department of railroads in Alabama for a number of years.

C. M. BYERLY, of Oxford, Ind., has been elected secretary of the Hastings, Nebr., Chamber of Commerce, succeeding Rev. J. P. Thiel.

JOHN H. CAUFIELD has been elected secretary of the Young Men's Business League of Waco, Tex., succeeding W. T. Wheeler, who resigned to become organization director of the West Texas Chamber of Commerce.

A. J. COLE has been elected secretary of the Chamber of Commerce at Pocahontas, Ark.

FRANK M. CROWELL, JR., is the new secretary-treasurer of the Afton, Okla., Chamber of Commerce.

HENRY F. DOOLEY, of Mankato, Minn., and late with the United States Army, has been elected secretary of the Williston, N. Dak., Commercial Club.

WALTER I. EATON, of Buffalo, N. Y., has been chosen as the new secretary of the Board of Trade at Cohoes, N. Y.

HENRY T. FARR has resigned the secretaryship of the Chamber of Commerce at Philipsburg, Pa.

FRED W. FIELD, of Toronto, Ont., has been elected manager of the Collingwood, Ont., Chamber of Commerce.

HARRY F. GREBEY has resigned the secretaryship of the Hazleton, Pa., Chamber of Commerce.

FRANK J. GREEN has resigned as manager of the Janesville, Wis., Chamber of Commerce, to accept the secretaryship of the Chamber of Commerce at South Bend, Ind.

CLARENCE J. GRIFFIN has been selected as the new secretary of the Chamber of Commerce at Carthage, N. Y.

DANIEL C. IMBODEN has resigned the secretaryship of the Chamber of Commerce at Silver City, N. Mex., to become secretary of the Chamber of Commerce at Concordia, Kans., succeeding John G. Scherf.

CAPT. HENRY W. NEIMEYER, of Indianapolis, is the new secretary of the Yuba County Chamber of Commerce at Marysville, Cal., succeeding C. H. Chace, who resigned to become secretary of the Home Products Bureau of the Consolidated Chamber of Commerce of Sacramento, Calif.

W. E. MILNER, of Winnipeg, has been selected as the new managing secretary of the Winnipeg, Man., Board of Trade, succeeding Walter B. Moore.

CLYDE R. MOULTON has resigned the secretaryship of the Bay Shore, N. Y., Community Association, to become secretary of the newly organized Chamber of Commerce at East Palestine, Ohio.

A. R. MUNDORFF, of Lebanon, Pa., has been chosen as the secretary of the newly organized Chamber of Commerce at Hornell, N. Y.

OVE E. OVERSON has resigned the secretaryship of the Chamber of Commerce at Stamford, Tex., to enter into a legal partnership in Ranger, Tex., with Judge George L. Davenport, the firm name being Davenport & Overson.

HENRY E. OWEN has tendered his resignation as manager of the Chamber of Commerce at Beloit, Wis.

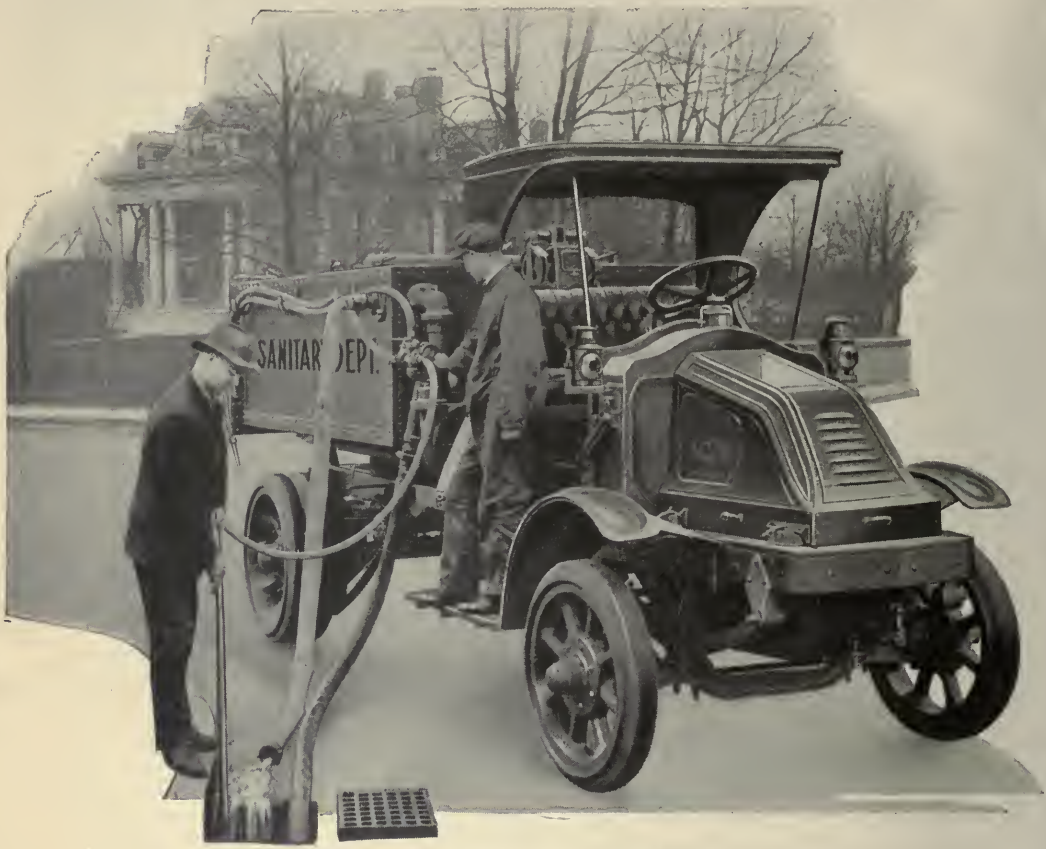
JOHN A. PIQUET, of Upper Montclair, N. J., has been elected secretary of the Chamber of Commerce at South River, N. J.

JOHN RICHARDSON, of Syracuse, N. Y., has been elected secretary of the Winchester, Va., Chamber of Commerce, succeeding Arthur M. Field.

GLENN SAMPSON has been chosen as the new secretary of the Normal, Ill., Commercial Club.

E. C. TAYLOR has been elected secretary of the Chamber of Commerce of North Adams, Mass.

GEORGE F. WELLS has resigned as manager of the Chamber of Commerce at Corning, N. Y., to accept the position of manager of the Janesville, Wis., Chamber of Commerce, succeeding Frank J. Green.



HOW are you cleaning your catch basins and sewers? In the old slow, expensive and disease-breeding way, with piles of filth on your streets? Or the "SECO" way?

The "SECO" Portable Pumping Apparatus cleans sewers and catch basins at a saving of 50 to 90% over the old way.

This apparatus is mounted on a special

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All Municipalities in Wisconsin Must Provide Comfort Stations

By A. L. H. Street
Attorney at Law, Minneapolis, Minn.

THE Wisconsin legislature recently enacted a law constituting 937f of the Statutes of that state, and reading as follows:

"1. Every city and incorporated village shall provide and maintain a sufficient number of suitable and adequate public comfort stations for both sexes. 2. The state board of health shall establish rules and regulations governing the location, construction, equipment and maintenance of public comfort stations, and may prescribe minimum standards that shall be uniform thruout the state. 3. The governing body of any incorporated city or village may adopt and enforce additional regulations deemed essential for the proper construction and maintenance of such public comfort stations."

Frank R. King, State Plumbing Inspector, states that "the rules and regulations provided for in the act are now being formulated." He further provides a condensed summary of tentative provisions relating to the code of rules to be adopted by the state board of health, which are given in the following paragraphs:

There are 317 incorporated villages and 124 cities in Wisconsin, and all are subject to the provisions of the act. Of these municipalities, 152 have water and sewerage systems, 91 have water-works but not sewerage, and 198 have neither. Cities and villages of the first class can provide washing facilities and water-flushed toilets; those of the second class, under favorable conditions, can provide waste disposal by sewage disposal systems; and those municipalities that cannot provide water-flushed toilet facilities may provide suitable privies, as may be directed by the State Board and local governing bodies.

Requirements concerning water-flushed toilets will be made. Regulations will be made concerning the location of the stations, with a view to insuring proper safety, convenience and sanitation, and permitting such stations to be made a part of such semi-public buildings as halls, court houses, libraries, fire and police stations, public parks, bridge abutments, etc.

Plans for the stations are to be submitted to the State Board of Health, and in some instances to the Industrial Commission. The same bodies or local authorities will supervise the construction. Provision will be made by the State Board for suitable approaches and privacy, etc., separating accommodations afforded both sexes.

Requirements for amply housing the equipment and serving the needs of the particular community will be made. Washing facilities are to be furnished where water and sewer are available. There will be provisions for towels, soap and paper, and service closets.

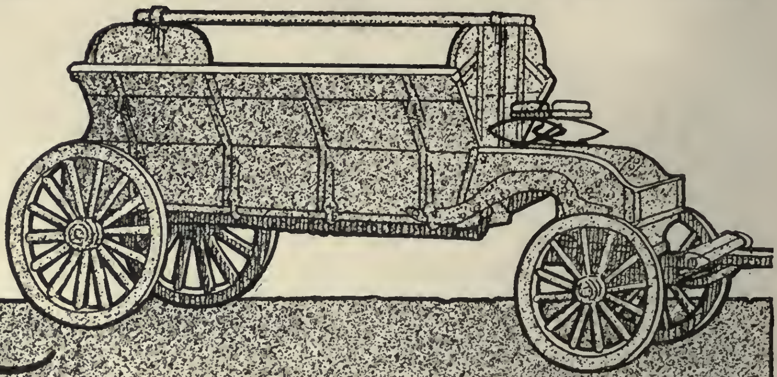
A uniform emblem will be adopted, consisting of a green circle five inches in diameter on the outside and one inch wide, with a white center bearing a four-pointed, orange-colored star. The body of the sign is to be white and the border and lettering a deep blue. These signs will be furnished by the state at cost.

Sections of the rules will deal with the design, construction, materials, light, ventilation, equipment, floors, walls, ceiling, doors, windows, partitions, and painting. Stations are to be open from sunrise until 10 in the evening, except as otherwise provided by local regulation. Care of the stations may be assigned to any proper person, such as the custodian of a building or a local constable, under definite instructions as to his duties. Display of indecent pictures and writing in the stations will be punishable offenses. General requirements will be made for sanitary and safe conditions. Special rules will be issued to apply to stations where water-supply and sewage disposal are not available.

Specimen ordinances, resolutions, etc., are to be furnished cities and villages for guidance. It is suggested that communities desiring to build stations of considerable size secure the assistance of an architect or engineer fully familiar with comfort station building types and equipment.

The Board expresses intention to secure the approval by local governing bodies of the rules to be finally adopted.

ASH WAGONS



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We manufacture a complete line of motor or horse drawn wagons—ash, garbage and rubbish wagons, trailers, semi-trailers and tractors. If your work brings you in touch with the hauling problems of your community, you will be interested in our illustrated book and folder—write for them.

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30 CENTER STREET CANASTOTA, N. Y.

City Manager Plan Thrives Under Handicaps

By Harrison G. Otis

Secretary, City Managers' Association

THE City Manager Plan of municipal government, regarded by Woodrow Wilson as "a marked advance over any plan heretofore tried in this country from the standpoint of efficiency and economy," seems to thrive under the many handicaps forced upon it by the events of the past two years. Notwithstanding the fact that the interest and energy of the entire country have been focused upon the problems of war and reconstruction, more cities took time to place their local government upon this business basis last year than during any preceding twelve months. The record for 1918 of thirty-two additions to the list of city-manager municipalities is apparently to be exceeded in 1919. Already the figures total twenty-five, with two more pledged for 1920. Many charter campaigns are scheduled for this fall.

This numerical increase is of slight significance, but the stories emanating from the scores of our cities, whose business affairs have been entrusted to trained managers during the war, mark a real epoch of municipal achievement.

Among the captions to the tales from eighty-five city-manager municipalities as collected in the Fifth Yearbook* of the City Managers' Association are the following:

Grand Rapids, Lowest Tax, No Overdrafts
Public Safety of First Importance
Wichita Saves Thousands of Dollars
Business Methods Pay at Altoona
Portsmouth Saves $44,000 First Year
Manager as Complaint Specialist
Reduce Debt, Cut Budget, Increase Service
Lowest Infant Mortality Rate
Deficit Turned to Surplus
After Three Years, $132,000 Better Off
Deficit Is Reduced During War
Letter to Tax Payers Invites Suggestions
Adversity Proves Manager Plan Flexible
Public Market and Canning Kitchens
Protection, Economy and Improvements
More Efficiency, Less Taxes
$90,000 Bond Issue Without Tax Increase
New Plan Removes Ill-Feeling at Election
Utilizing Prison Labor and Waste Products
Citizens Endorse Manager Plan
New City Prospers Under Manager Plan
Save Over $2 per Capita, First Year
Insurance and Tax Rates Reduced
Remarkable Record at Fredericksburg
Growth for Next 50 Years Planned
Handicapped by War, New Plan Beats Old
Municipal Utilities a Big Success
Tax Rate on Decline for Four Years
Saves 25 Per Cent of Tax Revenue
Business Men Willing to Serve
Lowered Tax Rate 3 Mills
Complete Information on Public Affairs
Pay Old Debts and Have Surplus
Success in Concentrated Responsibility
Expenses Cut, Welfare Increased

Hasty judgment would indicate that financial economy is the chief point at issue. To those who prophesied that the new form of government would prove "efficient but cold," the emphasis upon the human element of city affairs, found in these stories, comes as a genuine and happy surprise. Lest the results accomplished, flattering as they are, be misconstrued as a criterion of what the new plan may be expected to produce under more favorable conditions, the editor in the "Foreword" to this Yearbook makes three significant statements:

1. Readjustment of a city's working organization and methods is the first, the hardest and the least appreciated task of a city manager.

2. Government cannot be measured by the tax rate. Efficiency may allow reduced taxes; it may demand increased taxes; it may even dictate a deficit, in emergency, rather than endanger public safety. Real success lies in selling the most good government to satisfied tax-payers.

3. Progress under the new plan has been hampered by two temporary handicaps: war conditions, with scarcity and high cost of labor and materials, yet bringing increased demands for service; and the *newness* of city-manager government, with a consequent dearth of trained managers, a frequent lack of understanding on the part of commissioners, and a citizenship not yet wholly awakened to its task of participating in civic affairs and to the joy of disinterested community service.

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* See page 291.

Studebaker builds horsedrawn Sprinklers, as well as Units that can be mounted on standard makes of Motor Trucks.

Studebaker

South Bend, Indiana

Largest Vehicle Manufacturers in the World—Established 1852

The City's Legal Rights and Duties

A Monthly Department of Information for City Attorneys and Other Municipal Officers, Summarizing Important Court Decisions and Legislation

Conducted by A. L. H. Street, Attorney at Law

Nuisances in Streets

A decision of a county court in Pennsylvania raises some doubt in our minds as to whether it is sound, and whether it is in line with the weight of judicial authority. In this case—Malas vs. City of Coatesville, 10 Pennsylvania Municipal Law Reporter, 209—Judge Hause of the Chester County Court of Common Pleas holds that a city is not liable to an owner of abutting property for permitting manure accumulating from passing horses to remain in a street, altho the condition may be so filthy and unsanitary as to interfere with the enjoyment of the property.

Plaintiff based his suit on the fact that his restaurant business had been seriously injured by defendant permitting offensive odors to escape from the street on account of accumulated filth. The charter under which the city operates confers power to abate nuisances, but the defendant was sustained in a contention made before the Court that this power was not mandatory but permissive only.

> "Whether or not a particular thing in a street is a nuisance that may affect an abutting owner, but not the traveling public, is a question solely for the municipal authorities. When they act with reference thereto, they do so in virtue of authority conferred upon them by statute, and their action is discretionary."

The law editor of The American City has always been under an impression that judicial authority has established the principle that a city has no more right to *permit* a dead horse to remain in a street in front of private property when that constitutes an actual nuisance than it would have to actively create a nuisance by hauling the animal's carcass there.

Invalid Sewer Assessments

Land which is not, and cannot be, drained by a sewer cannot be assessed on account of its construction. (Oregon Supreme Court, Duniway vs. Cellars-Murton Co., 179 Pacific Reporter, 561.)

Municipal Control Over Streets

In Vermont a city has no proprietary right of compensation for the use of streets by an electric power company for a line of poles and electric wires, the right of granting the privilege being primarily with the State Legislature. And where an electric light and power company had occupied streets in Burlington before the city's charter was so amended as to give the city the right to regulate the use of the streets by such companies, the company had such vested right to continue to use the streets that the city could not impose as a condition upon such continued use that the company reserve the top gain of each pole for city purposes. (Vermont Supreme Court, Burlington Light & Power Co. vs. City of Burlington, 106 Atlantic Reporter, 513.)

Amendment of Pension Acts

Altho a police officer of the city of Chicago completed twenty years' service prior to July 1, 1917, and thereby became entitled, under an existing law, to a pension, he had no such vested right to it as to preclude the state from depriving him of the pension under an amendment of the law, effective that day, limiting the right to a pension to police officers who have not only served twenty years but who have also attained the age of fifty. (Illinois Supreme Court, Beutel vs. Foreman, 123 Northeastern Reporter, 270.)

Licensing Rooming Houses

The business of keeping a rooming-house is one so far affecting the public health, morale, or welfare, that it is proper for a city to adopt an ordinance requiring persons conducting such business to obtain a license, where the legislature in the exercise of the police power has conferred upon

Judge By Results

Price is not a safe criterion of motor truck values. Neither are specifications, however complete. There are too many factors determining quality that are not reflected by either.

The test of service is the final and conclusive one. For that alone can determine the operating economy, the dependability, the "life" of a truck,—its real service value.

DENBY
MOTOR TRUCKS

Denbys are built in a full range of sizes from one ton up.

The popularity of Denby Trucks in municipal service is founded on performance.

Their use is widening rapidly as the reports from city-owned Denbys spread through other municipalities.

DENBY MOTOR TRUCK COMPANY, DETROIT

(13)

the municipality the necessary authority to pass ordinances upon this question. (Georgia Supreme Court, Eisfeldt vs. City of Atlanta, 98 Southeastern Reporter, 495.)

Right to Increase Gas Rates

A gas company which has accepted a franchise for a stated period, with maximum rates for service fixed in the contract, will not be permitted to increase those rates on its own motion, altho war conditions may have rendered the rates so established unprofitable. This is the gist of the decision handed down by the United States District Judge in the Minnesota case of City of Moorhead vs. Union Light, Heat & Power Co., 255 Federal Reporter, 920.

Altho defendant's franchise does not expire until 1922, and this franchise specified $1.80 as the maximum charge for illuminating purposes and $1.45 for fuel gas, defendant gave notice of intention to advance the rates to $2.

The city sued to enjoin the increase in rates, and the Court, in overruling defendant's objection that war conditions had so increased the cost of production and distribution that continuance of the old rates would involve a loss to the company, said:

"The meat of the case is this: Does the fact that defendant's contract with the city has, by reason of the European war, become unprofitable, justify the Court in releasing defendant from the contract? Does a public utility company, which contracts to supply the public with a commodity like gas or electricity, occupy a different position from other contractors who have agreed to supply articles the cost of which have been greatly enhanced by the war? Is a public utility company entitled to modify its contract whenever a change is necessary in order to make performance profitable? When cities are expressly vested with power to enter into contracts as to rates, it is now established by repeated decisions of the Supreme Court that such contracts are binding upon the city even tho the public utility company may make extortionate profits therefrom. * * * Public utility companies are insistent that their rights under such contracts be protected by the courts against every attempt of the state or city to reduce rates, and when the city's power to make the contract is clear the courts have uniformly restrained their violation. If such be the law in favor of public utility companies, why should not the converse be equally true, and such companies be compelled to perform their contracts even tho they may result in loss?"

The Court notes, however, that in those states, such as New York, Massachusetts, California and Washington, which have public service commissions clothed with power to regulate public service rates, charges may be increased or decreased according to the inadequacy or excessiveness of existing rates, measured by fair returns to public service corporations on their investments. There is no state agency in Minnesota empowered to alter contract rates for gas service in municipalities. Therefore defendant must abide its contract, except as the city may consent to an increase in rates.

Municipal Debt Limits

The provision of the California constitution which prohibits cities from incurring liabilities exceeding annual income unless assented to by two-thirds of the voters does not apply to the issuance of funding or refunding bonds to discharge a judgment obtained against a municipality on account of personal injury due to negligence on its part. (California Supreme Court, City of Long Beach vs. Lisenby, 179 Pacific Reporter, 198.)

Taxing Telegraph Companies

An ordinance levying a license tax upon the intrastate business of a telegraph company transacted within the corporate limits of the city, but expressly exempting from its operation interstate and government business, is not invalid. (Alabama Court of Appeals, Western Union Telegraph Co. vs. City of Decatur, 81 Southern Reporter, 199.)

Ordering Service Extensions

In ordering extension of a water-main for the benefit of property owners on an outlying street in New Castle, Pa., by the local water company, the Pennsylvania Public Service Commission recently declared that extensions will be ordered where reasonably required, altho the water company's franchise may limit extensions to cases where certain consumption is guaranteed. The Commission added:

"Where a public utility assumes to serve a community it should consider its obligation to serve the entire district described in its charter and should so plan its affairs that it will be able so to do, within reasonable grounds. It cannot select and serve only the profitable patrons. Respondent has the right to collect a revenue sufficient to pay for operation, depreciation and a fair return upon its fair value. This protection and return enable it to maintain its credit and thereby secure additional capital to make reasonable extensions and ad-

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ditions when and as needed." (10 Pennsylvania Municipal Law Reporter, 223.)

Binding Character of Street Railway Franchise

A street railway company which has accepted a municipal franchise for the operation of a railroad for a fixed term of years, in which the fares to be charged during the life of the contract are fixed, is not entitled to have the franchise terminated on the ground that abnormal increases in wages, caused by the war and action of the War Labor Board, render it impossible to continue to operate under the franchise without bankrupting the company. If the company did not desire to run the risk of such abnormal conditions arising, it should have been guarded against by specific provision in the contract. The fixing of wages to be paid by a street railway company in arbitration by the War Labor Board, altho at a rate which, under the charter contract between the company and city, is confiscatory, is not such a direct interference with the contract by the Government as to excuse the company from performing its agreement. (United States District Court, Southern District of Ohio, Burr vs. City of Columbus, 256 Federal Reporter, 261.)

Editor's Note.—This decision has become final thru its affirmance by the United States Supreme Court.

Validity of Fire Regulations

The legislature having expressly granted power to cities to prescribe fire limits and to regulate the kind of materials to be used and the character of buildings to be erected within those limits, courts are powerless to question the wisdom or motives of a city in exercising that right. (Arizona Supreme Court, Mosher vs. City of Phœnix, 181 Pacific Reporter, 170.)

Slippery Pavement as Defect

A city was liable for maintaining its paved street at a crossing in such slippery condition that a pedestrian fell, where the place was obviously dangerous. (Kansas City Court of Appeals, Berry vs. City of Sedalia, 212 Southwestern Reporter, 34.)

Colorado Workmen's Compensation Act

The Colorado Workmen's Compensation Act is not broadly enough worded to provide for an award in favor of the dependent relatives of a police officer killed by one whom he was attempting to arrest. (Colorado Supreme Court, Helburg vs. Town of Louisville, 180 Pacific Reporter, 751.)

Flooding of Private Property

Plaintiff, owner of a warehouse, consented to construction of a railroad grade in an abutting street, knowing that surface waters would thereby be collected in the street. Negligent deposit of trash in the street by the city contributed to a flooding of the basement of the warehouse. But it is held by the South Carolina Supreme Court in the case of Kirkland Distributing Co. vs. City of Columbia et al., 98 Southeastern Reporter, 843, that the city is not liable in damages to plaintiff, since plaintiff's own negligence combined with that of the city in producing the injury.

Extra Work Under Municipal Contracts

Where a contractor erecting a municipal building was obstructed by representatives of the city in the prosecution of his work, and thereby was required to do extra work, he became entitled to compensation covering his damages, notwithstanding the fact that the contract contained a provision limiting the city's liability for extras to those approved by certain officers of the city. The contractor also became entitled to damages arising from the city's furnishing him defective plans for the building, resulting in his being compelled to do extra work. (New York Supreme Court, Appellate Division, M. L. Ryder Building Co. vs. City of Albany, 176 New York Supplement, 456.)

Necessity for Contractor's Bond

A street railway company is not entitled to recover against a city for hauling crushed stone for use in improving the municipality's streets where there was no compliance with a requirement in the city's charter for giving of a bond to secure faithful performance of all contracts involving $500 or more. One contracting with a city is chargeable with notice of all pertinent provisions of the municipal charter. And when a charter declares that a bond "shall" be taken in certain matters, there is no power in the city authorities to waive the security, altho the contractor may be regarded as wholly responsible financially. (Massachusetts Supreme Judicial Court, Bay State Street Railway Co.

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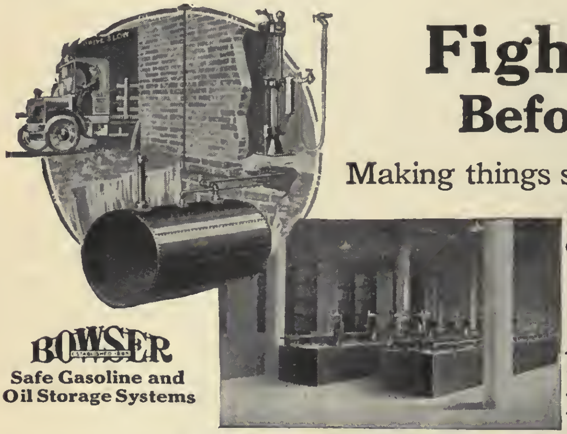

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vs. City of Woburn, 122 Northeastern Reporter, 268.)

Safety of Sidewalks for Travel

Holding that a pedestrian was not entitled to recover damages for injury sustained in stumbling over a curbing defining the limits of a driveway affording access to a cemetery over a sidewalk, the Appellate Division of the New York Supreme Court said in the recent case of Daly vs. Trinity Church, 176 New York Supplement, 734:

> "The pedestrian is not entitled to an absolutely level and unobstructed passageway. The municipal authorities may erect hydrants, lamp posts, electric light poles, or authorize the erection of hitching posts, stepping-stones, or may, and of necessity must, elevate the sidewalk above the gutter and roadway. It is the duty of the pedestrian to exercise his right of passage along the sidewalk with regard to these lawful incumbrances or inequalities. If thru inattentian he suffers injury, it is his own fault or misfortune."

Damage Caused by Municipal Drainage

A city is not liable for flooding of private premises caused by insufficiency of drains provided by the municipality, where the flooding follows extraordinarily heavy rainfall. (Wisconsin Supreme Court, Andrus vs. City of Ashland, 172 Northwestern Reporter, 721.)

Adverse Possession of Land

The mere fact that an owner of unfenced land permitted pedestrian and vehicular traffic to pass over it for thirty years or more did not vest in the city a permanent right of way across the land for street purposes. (Louisiana Supreme Court, Reymond vs. City of Baton Rouge, 82 Southern Reporter, 75.)

On the Calendar of Conventions

September 15-17.—Cleveland, Ohio.
American Society of Sanitary Engineering. Annual convention. Secretary, J. F. Doud, City Hall, Cincinnati, Ohio.

September 16-18.—North Vancouver, B. C.
Union of British Columbia Municipalities. Annual convention. Secretary, A. W. Gray, City Hall, New Westminster, B. C.

September 17-19.—Muscatine, Iowa.
League of Iowa Municipalities. Annual convention. Secretary, Frank G. Pierce, Marshalltown, Iowa.

September 22-23.—Kansas City, Mo.
Missouri Association of Commercial Organization Secretaries. Annual convention. President, Harry W. Graham, Chamber of Commerce, Chillicothe, Mo.

September 23-24.—Danville, Va.
League of Virginia Municipalities. Annual convention. Secretary, L. C. Brinson, Portsmouth, Va.

September 23-24.—Belfast, Me.
Maine State Board of Trade. Annual meeting. Secretary, Edward M. Blanding, Bangor, Me.

September 23-26.—Chicago, Ill.
International Association of Municipal Electricians. Annual convention. Secretary, Clarence R. George, Houston, Tex.

September 24-25.—Erie, Pa.
American Water Works Association. Central States Division. Annual convention. Secretary, R. P. Bricker, Shelby, Ohio.

September 25-27.—Spokane, Wash.
Washington Association of Commercial Organization Secretaries. Annual convention. Secretary, A. F. Marsh, Chehalis, Wash.

September 30—October 3.—Albany, N. Y.
New England Water Works Association. Annual convention. Secretary, Willard Kent, Narragansett Pier, R. I.

October 1-4—Cleveland, Ohio.
National Safety Council. Eighth Annual Safety Congress. Secretary, S. J. Williams, 208 La-Salle Street, Chicago, Ill.

October 2-5.—Urbana, Ill.
Better Community Conference. Held under the auspices of the University of Illinois. Address R. E. Hieronymus, Community Adviser, Urbana, Ill.

October 8-10.—Atchison, Kans.
League of Kansas Municipalities. Annual convention. Secretary, Albert A. Long, University of Kansas, Lawrence, Kans.

October 15.—Boston, Mass.
Massachusetts Chamber of Commerce. Annual meeting. Secretary, Edward G. Stacy, 6 Beacon Street, Boston, Mass.

October 20-22.—Winnipeg, Man.
National Educational Conference of Canada. First conference. Address, Professor W. F. Osborne, University of Manitoba, Winnipeg, Man.

October 20-24.—New York City.
American Prison Association. Annual Prison Congress. General Secretary, Joseph P. Byers, 3510 Lancaster Avenue, Philadelphia, Pa.

October 20-25.—Riverside, Cal.
League of California Municipalities. Annual convention. Executive Secretary, W. J. Locke, Pacific Building, San Francisco, Cal.

October 27-29.—Indianapolis, Ind.
National Association of Commercial Organization Secretaries. Annual convention. Secretary, Willis Evans, Association of Commerce, Peoria, Ill.

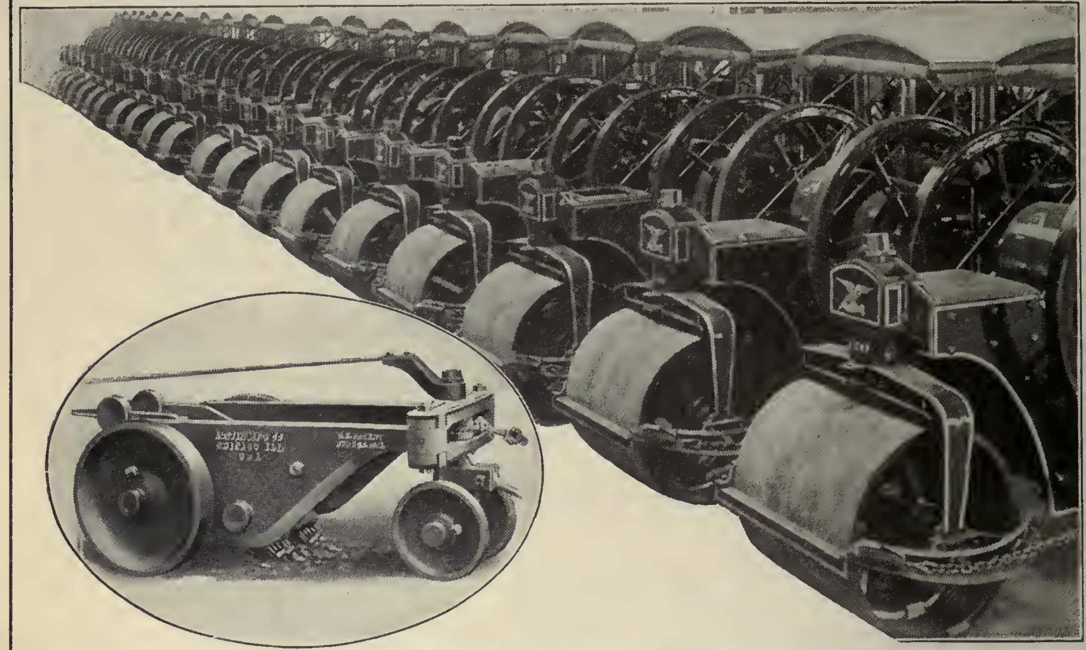
October 27-30.—New Orleans, La.
American Public Health Association. Annual meeting. Secretary, A. W. Hedrich, 169 Massachusetts Avenue, Boston, Mass.

October 28-29.—Edmonton, Alta.
Union of Alberta Municipalities. Annual convention. Secretary, J. D. Saunders, Camrose, Alta.

October 29-31.—Philadelphia, Pa.
American Civic Association. Annual convention. Secretary, E. E. Marshall, Union Trust Building, Washington, D. C.

November 12-14.—New Orleans, La.
American Society of Municipal Improvements. Annual convention. Secretary, Charles Carroll Brown, 304 East Walnut Street, Bloomington, Ill.

December 26-30.—Cleveland, Ohio.
National Municipal League. Annual convention. Secretary, Clinton Rogers Woodruff, North American Building, Philadelphia, Pa.



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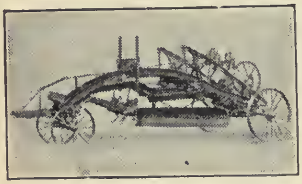

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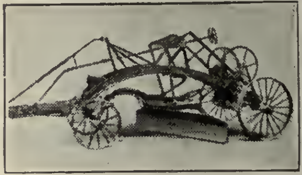

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Municipal and Civic Publications

See also Department of News and Ideas for Commercial and Civic Organizations

Fifth Yearbook of the City Managers' Association.

Harrison G. Otis, Secretary, Tribune Building, New York. 1919. 175 pp.

A number of brief reports from cities operating under some form of city-manager government, the proceedings of the annual meeting of the City Managers' Association held November 6-8, 1918, at Roanoke, Va., a summary of city manager data, a list of city-manager municipalities with a map showing their distribution thruout the United States, and photographs of members of the Association are the chief features of this volume. Full reports of all discussions and speeches at the annual meeting are included. A list of the lecture titles, with speakers, follows: The Model City Charter, by Clinton Rogers Woodruff; Proportional Representation, by C. G. Hoag; Establishing and Maintaining Commission-Manager Government, by Lucius E. Wilson; Progress, Problems and Pitfalls of the New Profession, by O. E. Carr; A Reconstruction Program for City Managers, by Richard S. Childs; City Planning After the War, by Myron H. West; and Duties and Problems of the City Manager, by Kenyon Riddle.

Automatic Sprinkler Protection.

Gorham Dana, Manager, Underwriters Bureau of New England. John Wiley & Sons, Inc., New York City. 1919. vii + 443 pp. 349 figures.

This book deals with all phases of automatic sprinkler protection, and is an excellent publication for municipal officials and fire engineers, as well as for chambers of commerce wishing to have valuable fire prevention literature in their libraries.

Developing Executive Ability.

Enoch Burton Gowin, Assistant Professor of Commerce, New York University. The Ronald Press Company, New York. 1919. xxiv + 486 pp.

This book aims to train the busy executive in the vision and systematic methods necessary to success. A large number of definite helps, based on a thoro knowledge of business psychology and practice, are presented in readable, attractive style.

Social Games and Group Dances.

J. C. Elsom, M. D., and Blanche M. Trilling, Department of Physical Education, University of Wisconsin. J. B. Lippincott Company, Philadelphia. 1919. 258 pp. 53 illustrations and many music scores.

A collection of games and dances suitable for community and social use.

How to Face Peace: A Handbook of Community Programs.

Gertrude Mathews Shelby. Henry Holt & Company, New York. 1919. viii + 311 pp.

The wealth of suggestions for community reconstruction programs contained within the covers of this book should be of much practical and inspirational value to communities and individuals desiring to find their places in the big, constructive work now before the nation. "Jobs little and big" are described; and every community is urged to realize that well-defined plans and team-work form the key-note of success. Special chapters are devoted to the following problems: employment of returned soldiers, women and children in industry, recreation, health, housing, food conservation, gardening, Americanization, education, community organization, publicity and finance, and discussion of national aims. An appendix contains a program in outline of state, county and municipal reconstruction projects, prepared and published by the American City Bureau, also a bibliography of helpful literature on the subject.

Wholesome Citizens and Spare Time.

John L. Gillin, Professor of Sociology, University of Wisconsin. Issued by the Survey Committee of the Cleveland Foundation, 2025 East Ninth Street, Cleveland, Ohio. 1918. 182 pp.

One of the seven sections of the report of the Recreation Survey of Cleveland conducted in 1917 by the Survey Committee of the Cleveland Foundation. This section endeavors to show what part recreation has had in the development of wholesome citizens and what kinds of recreation have been influences in the lives of these citizens. Data collected concerning 160 "wholesome citizens" of Cleveland form the basis of the Committee's recommendations, which should be of interest to officials and others charged with responsibility for recreational activities.

School Work and Spare Time.

F. G. Bonser, Professor of Education, Columbia University. Survey Committee of the Cleveland Foundation, address above. 1918. 176 pp.

Another of the Cleveland Recreation Survey reports. In two parts: (1) What School Work Does and Might Do for Spare Time; and (2) What Spare-Time Activities Do and Might Do for School Work.

Broken Homes: A Study of Family Desertion and Its Social Treatment.

Joanna C. Colcord, Superintendent of the Charity Organization Society of New York City. Russell Sage Foundation, New York. 1919. 208 pp.

An analysis of some of the causal factors in the problem of the deserter and a discussion of recent changes in methods of social workers in handling this problem. A number of concrete illustrations are discussed, and some possible future steps, both legal and social, are suggested. It should be of especial value to officials in Departments of Charities, and Courts of Domestic Relations.

Zoning and City Planning for Portland, Ore.

Charles H. Cheney. Bulletin No. 1 of the City Planning Commission, Portland, Ore. 1919. 55 pp. Illustrated by photographs and maps.

A practical outline of the reasons for zoning the city of Portland and a summary of the results of the housing survey and the findings of the City Planning Commission up to June, 1919.

The Six-Hour Day and Other Industrial Questions.

Lord Leverhulme. Henry Holt & Company, New York. 1919. xv + 344 pp.

This collection of some of the more important addresses of Lord Leverhulme contains his comments on the six-hour day and co-partnership, and other addresses

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dealing with various industrial and social questions, such as housing, education in its relation to business, day-work as compared with piece-work, industrial administration, and the "mirage" of socialism. Not only has Lord Leverhulme stated clearly in his speeches his ideas regarding present-day industrial reform, but he has also described his application of these conclusions to his own large works.

Democracy: Discipline: Peace.

William Roscoe Thayer. Houghton Mifflin Company, New York. 1919. 124 pp.

An American Labor Policy.

Julius Henry Cohen. The Macmillan Company, New York. 1919. 110 pp.

Municipal Reform in Philadelphia.

An analysis and commendation of Philadelphia's new charter and reform laws, "characterized by experts in municipal legislation as the most advanced step that has yet been taken affecting the government and administrative efficiency of cities of large size in the United States." An introductory summary by Senator Boies Penrose and a review of the benefits of the new charter by Clinton Rogers Woodruff are included. 1919. 59 pp. (This pamphlet and a copy of the charter can be secured from the Bureau of Municipal Research of Philadelphia, Frederick P. Gruenberg, Director.)

Suggested Minimum Standards for Child Welfare.

The Washington Child Welfare Conference held May 5-8, 1919, divided into three sections to consider: (1) Child Labor and Education: (2) Public Protection of the Health of Mothers and Children; and (3) Children in Need of Special Care. The minimum standards formulated and recommended by the three sections have been printed in a pamphlet which is now being issued by the Children's Bureau, U. S. Department of Labor, Washington, D. C. 16 pp.

A City Plan and How to Get It.

A paper delivered before the Wisconsin Association of Commercial Secretaries on June 10, 1919, by James R. Kinsloe, Secretary, Chamber of Commerce, La Crosse, Wis., on "The Secretary's Part in Educating His Community to City Planning," first emphasizes the secretary's need of a thoro understanding of the subject before he attempts to educate the community, and then briefly outlines a program for him to follow in his educational campaign.

Municipal Reports

Boston's Municipal Register for 1918.

Containing a register of the city government, rules of the City Council, amended city charter of 1909, a survey of the city departments with lists of officials, also various statistics relating to the city. 360 pp. (Apply to James Donovan, City Clerk.)

Engineering Department, Port Arthur, Texas.

Clarence E. Ridley, City Engineer of Port Arthur, Texas, has completed the preparation of the first annual report of the Engineering Department for the year ending March 31, 1919, and will be pleased to exchange for similar reports from other cities or to send copies upon request. 73 pp., illustrated by maps and photographs.

Board of Park Commissioners, Minneapolis, Minn.

1918. 98 pp., including 28 full-page photographs and 2 sketches of plans. Large city map in attached envelope. (Apply for copies to J. A. Ridgway, Secretary.)

Report of the Director of Education, Manila, Philippine Islands.

An interesting report of school activities in Manila during the year 1918, illustrated by numerous photographs. 195 pp. (Apply to W. W. Marquardt, Director of Education, Manila, P. I.)

Bureau of Water, Buffalo, N. Y.

For year ending June 30, 1918. 86 pp. (Apply to Harry O. Wait, Secretary, Bureau of Water, Department of Public Works, Buffalo, N. Y.)

Board of Public Utilities, Los Angeles, Cal.

July 1, 1917, to June 30, 1918. 88 pp., illustrated with graphs. (Apply to Herbert S. Payne, Secretary.)

Board of Public Works, Holland, Mich.

For year ending March 17, 1919. 35 pp. (Apply to Wm. Winston, Clerk.)

Quadrennial Report of Board of Local Improvements, Chicago.

An account of the activities of the department for the period 1915 to 1918. 100 pp. Illustrated. (Write to Edward J. Glackin, Secretary.)

Health Department, Springfield, Mass.

Year ending December 31, 1918. 50 pp. (Write to Grace E. Warren, Chief Clerk.)

City Plan Commission, St. Louis, Mo.

For year ending April 30, 1919. 8 pp. (Apply to Burton Bunch, Secretary.)

Board of Health, Fall River, Mass.

Year ending December 31, 1918. 118 pp., attached chart and graph. (Apply to Frank L. Larkin, Secretary.)

Town Officers of Marion, Mass.

66th annual report. Year ending December 31, 1918. 157 pp. (Apply to Henry C. Luce, Town Clerk.)

Town of Southington, Conn.

For year ending August 31, 1918. 48 pp. (Apply to Harry H. Merrell, Town Clerk.)

Commission Government in Marquette, Mich.

Annual message of the City Commission and the reports of the departments for the year 1918. 119 pp., illustrated. (Apply for copies to Elsie M. Dupuis, City Clerk.)

Board of Water Commissioners, Johnstown, N. Y.

Forty-first annual report, filed with the City Clerk, January 10, 1919. 46 pp., 8 photographs. (Write to Grover E. Yerdon, City Clerk.)

City of Portsmouth, Va.

Mayor's annual message, together with municipal reports for the year 1918. 92 pp. (Apply to J. T. Hanvey, Mayor.)

Board of Park Commissioners, Fort Wayne, Ind.

Fourteenth annual report. 1918. 45 pp., including 16 attractive photographs, 2 plans of park developments and 1 cartoon. (Write for copies to David N. Foster, President of the Board of Park Commissioners.)

Board of Park Commissioners of the Cleveland Metropolitan Park District.

First annual report, for the period beginning July 30, 1917, and ending December 31, 1918. 50 pp., copiously illustrated. (Issued by Cleveland Metropolitan Park Board.)

Milwaukee Water-Works.

Year ending December 31, 1918. 111 pp. + attached graphs, map and table. (Apply to H. P. Bohmann, Superintendent of Water-Works, Milwaukee, Wis.)

Juvenile Commission, Hartford, Conn.

Tenth annual report, for the year ending April 30, 1919. 30 pp. (Apply to Miss Eva Cohen, Secretary, The Juvenile Commission, Hartford, Conn.)

Board of Commissioners, Rockford Park District.

Year ending December 31, 1918. 16 pp. (Apply to the Secretary, Frank J. O'Brien, Rockford, Ill.)

Women's Department House of Correction, Chicago.

Report of social service work in the Women's Department House of Correction from September 1, 1917, to March 1, 1919. 36 pp. (Apply to Miss Louise Osborne Rowe, Commissioner, Department of Public Welfare, Chicago, Ill.)

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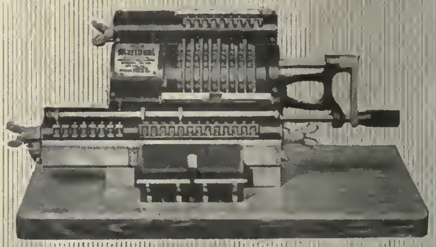
Seattle:	262 Empire Bldg.

MARCHANT CALCULATING MACHINE CO.
Oakland California



Methods, Materials and Appliances

News for Boards of Public Works, Engineers, Contractors, Purchasing Agents, and Others Interested in the Economical Construction and Efficient Operation of Public Improvement Undertakings

Protecting New York's Water Supply

The principal watersheds which comprise the surface water sources of New York City's water supply have a combined area of over 900 square miles, capable of furnishing about 1,075,000,000 gallons daily if necessary. The entire supply, which is unfiltered, is sterilized with chlorine by Wallace & Tiernan apparatus.

Prior to 1911, surface water of a sufficiently high sanitary quality was obtainable without treatment, but as with all surface supplies, it was necessary to establish and maintain a complete system of watershed supervision, inspection and control. The completion of highways around the new reservoirs, particularly Ashokan Reservoir, brought a great many travelers and summer residents at considerable distance back from the edge of the reservoirs. However, this furnished possible pollution, and great care had to be exercised to maintain the high sanitary quality of the supply of the largest city in the United States.

The first method of sterilizing the water was by calcium hypochlorite at the Croton Dam. This plant was removed to the new aqueduct and then again to Dunwoodie, N. Y., where a permanent building was erected. After three years' experience with hypochlorite the water-supply engineers decided to change to the more readily controlled sterilizing agent, liquid chlorine. In July and August, 1914, all the different makes of apparatus on the market were installed at Smith's Point, L. I., to determine their relative efficiency. The results of these tests showed clearly that Wallace & Tiernan apparatus met all the requirements and was capable of delivering a uniform flow of gas under all conditions. At the present time there are 27 W & T chlorinators in service on the various supplies of New York City.

The average daily water consumption in Greater New York is about 600,000,000 gallons, every drop of which is sterilized by liquid chlorine controlled by W & T equipment. Water leaving the Kensico Reservoir is treated with liquid chlorine by four units of equipment installed in the gate chamber of the Catskill Aqueduct at Kensico, N. Y.

Many difficult problems were encountered in the chlorination of the Catskill supply, but these were all overcome by ingenious arrangements of apparatus and methods of application. In order to further protect the supplies, the water flowing in the Kisco River was sterilized by five manually controlled chlorinators, which are shown in the accompanying illustration.

STERILIZING THE KISCO RIVER BY FIVE MANUALLY CONTROLLED CHLORINATORS

Shale that Machine Cut at 3 Ft. Per Minute

Waterworks Men!

Look to your costs in these days of high prices and wages. The P & H Excavator purchased by the Erie, Pa., Water Dept. (by whom the record shown here was made) returned half its cost on four miles of mains.

P & H Equipment covers every phase of the job from the opening of the trench to getting the backfill back quickly and compactly. Send for general catalog.

PAWLING & HARNISCHFEGER CO.
MILWAUKEE, WISCONSIN

660 Ft. In 3 Hours

During 1915, considered an ordinary year, the city laid 25,000 ft. of 6- and 12-in. mains in hand excavated trenches at a labor cost for digging, laying and back-filling of 28.8c. a foot for the smaller and 36.08c. a foot for the larger size. Much more pipe was laid in 1916 and this year because of the rapid growth of the city. While complete unit costs for the last year's work have not yet been compiled, it is known that rising wages caused considerable increase over those of 1915. Records for 10,000 ft. of 6-in. main laid at one time last year show a total labor cost of 37.1c. per foot, of which digging alone represented 19c. with common labor 27½c. an hour. The trench was in clay, with shale at the bottom. As compared with this, the first performance with the trenching machine, excavating for 1620 ft. of line, was accomplished at a fuel and labor cost of $132.84, or 8.2c. per foot for actual digging. This was in gravel which required sheeting, the cost of which is included in the above figure. On another occasion, in digging through cut-over land, where many large but partly rotted stumps were cut through, 682 ft. of trench was dug in four hours, at a cost of $7.55 for three men and 15 gal. of gasoline—only 1.1c. per foot. On Oct. 5 the machine made its speed record of 660 ft. in three hours, but $3.02 for gasoline and $1.88 for the wages of the engineer and helper being charged to the operation. This was about ¾ of a cent per foot. Both trenches were in shale at the bottom.

P&H excavators, back-fillers, tampers.

16-Inch Valves in Cincinnati

When the high-pressure service was installed in Cincinnati, Ohio, in 1914, it was realized that a special valve would be needed to take care of the extraordinary requirements.

16-INCH VALVES FOR HIGH-PRESSURE SERVICE

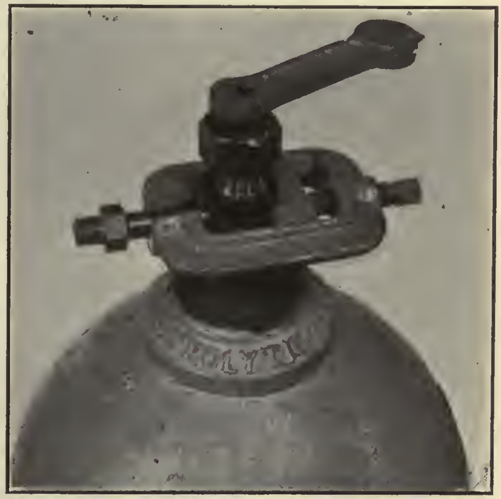
A special valve for this type service was designed by Pratt & Cady Company, Inc., Hartford, Conn., and a large order for them received. The accompanying photograph shows one of these 16-inch valves, which up to the present time have required absolutely no repairs. Valves similar to this are being furnished constantly by this firm to other cities thruout the country, and are giving the same excellent service.

Chlorine Cylinder Valves

Simplicity of design and operation is assurance of the highest efficiency in any mechanical device, and nowhere is this more desirable than in apparatus which comes in contact with such a highly corrosive gas as chlorine. What are the conditions that have to be considered in the design of a valve which is to be used on cylinders for the transportation of liquid chlorine? Clearly, the first consideration is that of the person whose duty it is to manipulate such valves. Next, what is the function of the valve? Is it used both to prevent the escape of chlorine from the cylinder and at the same time to regulate the flow of the gas therefrom? Chlorine cylinder valves should not be used for controlling or regulating the flow of gas from the cylinder, but purely and simply as a device for securely sealing or preventing the contents of the cylinder from escaping while in storage or in transit, just as bottles are securely corked and sealed. Chlorine attacks all valve packings to a greater or less degree, the constant turning of the valve stem, necessary in regulating the flow of gas from the cylinder, affecting the valve stem packing so that chlorine is likely to leak past the packing when the valve stem is removed from its seat. In valves where it is impossible to tighten or repack the valve stem packing under pressure, this condition becomes a serious menace to those in the vicinity of a leaky valve.

In consideration of the valve used on cylinders containing chlorine sold by Arnold, Hoffman & Co., 61 Broadway, New York, and manufactured by the Mathieson Alkali Works, Inc., Niagara Falls, N. Y., it will be noted that the stuffing box is of the usual design, of ample depth so as to provide for a generous amount of packing, which withstands to a fair degree the action of chlorine. In case a leak should occur, almost any operator would know how to tighten the stuffing box, because of its simplicity and similarity to the usual design. If the packing should be damaged to a degree where repacking was necessary, the valve can be repacked under pressure by turning the stem down upon its seat, removing the packing nut and gland and packing in the usual manner.

By making use of a specially designed clamp and connector, shown in the illustration, most difficulties in connecting the cylinder to a chlorinator are avoided. The flanged end of the connector is inserted in a counterbored hole in the valve body, a small lead washer being previously inserted; and the clamp is placed over the valve, one end engaging the flange on the connector and the screw plate on the other abutting against the valve body, so that when the clamp screw is tightened the connector is forced tightly against the lead washer, insuring a tight joint.



VALVE AND YOKE USED ON LIQUID CHLORINE CYLINDERS OF THE MATHIESON ALKALI WORKS

Hardinge Police Register

Keeps the Patrolman On the Job

From all quarters today comes the cry "Give us more policemen," but policemen cost money.

The chances are that if every man on the force were efficient the need for extra policemen would not be so great.

The larger cities can afford an elaborate electrical system to check the rounds of patrolmen.

The smaller cities cannot afford an electrical system and yet have even a greater need for some such arrangement.

The Hardinge Police Register System at a fraction of the cost of an electrical system will produce the same result, that is, force every man on the force to do the work expected of him.

Hardinge Police Registers are mechanically perfect and tamper-proof. They may be installed on telephone poles or other objects anywhere. There is no wiring. They will produce an embossed record on paper of every patrolman's rounds.

The amount of money wasted on slacker patrolmen is enormous and part of the waste is right in your own city.

Cut out this waste today and give your municipality the protection from fire and crime that the taxpayers are paying their good money for.

A request for information will receive a prompt, cheerful and detailed reply.

HARDINGE BROTHERS, INC.

MANUFACTURERS OF HARDINGE POLICE REGISTERS
AND PATROL AND ALERT WATCHMAN'S CLOCKS

4147 East Ravenswood Ave. Chicago, U. S. A.

"SHOOTING THE CHUTE" AT MEDICINE PARK, OKLA.

Prevost Hubbard Accepts New Position

Prèvost Hubbard, formerly Chief of the Division of Tests and Research of the United States Bureau of Public Roads, has accepted the position of chemical engineer for The Asphalt Association, 15 Maiden Lane, New York. In his new position he will direct the technical and research work of the Association, and will coöperate to the fullest possible extent with public officials, engineers, contractors and others interested in highway construction and the use of asphalt for various purposes.

George A. Johnson Again Promoted

George A. Johnson, whose partnership with Major W. L. Benham was recently announced in these pages, was promoted on July 3 to the rank of Colonel. Colonel Johnson entered the service in the spring of 1918 as Major, and was promoted to Lieutenant-Colonel on November 7, 1918. He is now second in command of the Operation and Repair Branch of the Construction Division of the Army, which has charge of the operation and maintenance of roads, railroads, buildings, water-supply, sewerage, electrical and all other utilities in the various establishments under the jurisdiction of the War Department.

A Water Slide

Probably no other piece of playground equipment gives so much satisfaction to fun lovers of all ages as the wave coaster slide. This slide, manufactured by the American Playground Device Company, of Anderson, Ind., makes a valuable addition to the outdoor swimming pool, as is evident in the above photograph, showing one of these slides in use at Medicine Park, Okla. The model in the illustration has a chute 30 feet long, lined along the bedway with galvanized steel. The platform framework and platform supports are of galvanized pipe, wood construction being completely lacking except in the platform base or floor. The ladder approach is equipped with perforated steel treads and metal hand rails, and is pitched on an easy slant. The slide is adapted for use on both land and water.

Reliable Information on Road Construction

The Highway Industries Association, 1311 G Street N. W., Washington, D. C., is coöperating thru its editorial department with good roads organizations and state highway departments thruout the country in the promotion of bond issue campaigns and other means of insuring the construction of economic highways.

An editorial and publicity service, based upon an intimate understanding of all points involved in road development, is thus placed at the call of highway improvement organizations upon a purely coöperative basis and without charge The Highway Industries Association, representing, as it does, all factors impartially, is free from the influence of any particular material interest. It was organized and is operating for the specific purpose of coördinating highways with other transportation agencies of the country, to encourage the development of highways that advance the economic life of the nation, to stimulate their use in such a manner as to facilitate and cheapen the transportation of food, raw material and finished products, and to coöperate

Reduce Lamp Renewals By Close Current Regulation

Westinghouse

Ventilated-Coil Type, Series Mazda

Regulators

give such accurate regulation that the lamp filament is afforded ample protection at all times against excessive current and surges on the series circuit. This protection means increased lamp life and lower operating costs.

Westinghouse Type CF Luxsolite Fixtures are designed for use with the highly efficient gas-filled Mazda Lamp. They are attractive and durable. With the various types of diffusing and refracting glassware, they satisfy the most exacting requirements of efficient Street Lighting.

Westinghouse Electric & Manufacturing Co.
East Pittsburgh, Pa.

Westinghouse

with government agencies, both state and national, to the end that the public highways may be of maximum service in the transportation system of the country.

The editorial branch of the Association's activities is under the direction of James W. Brooks, former executive editor of the American Magaine Association, and a recognized authority on the fundamental principles involved in community development. He also writes and directs the production of motion picture films for municipal and highway improvement, and in this capacity occupies the unique distinction of being the first screen editorial writer in America.

Highway officials and others interested in presenting arguments for municipal and highway improvements in a most convincing manner, will find that this branch of the Highway Industries Association works a great advantage in the conduct of state, county and municipal campaigns.

Handy Tables for Electric Lighting

In the June, 1919, issue of The American City was published an item stating that a very comprehensive booklet containing handy wiring tables and illumination data for the use of those interested in the more efficient use of electric light could be secured from the George Cutter Company, South Bend, Ind., and that it would be of value to city officials interested in street lighting. This was an error on the part of The American City, as these tables are intended to cover industrial lighting only. However, a full set of literature describing Cutter standards for street lighting for up-to-date and progressive cities can be secured by any of our readers by writing to the George Cutter Company, 413 Notre Dame Street, South Bend, Ind.

Arthur H. Blanchard, Professor at Michigan University

Arthur H. Blanchard has been appointed Professor of Highway Engineering at the University of Michigan, to occupy the chair recently established by the Board of Regents. He will retain his consulting office at Broadway and 117th Street, New York City, until September 15, after which he will be located in Ann Arbor, Mich.

New Selling Offices for Luitwieler Company

David Garvey, an experienced well driller, and F. W. Meegan, both of whom have represented the Luitwieler Pumping Engine Company in the East for the last six years, have organized the Hydraulic Engineering Corporation and will act as sole distributors—domestic and export—in the East for the Luitwieler Company, with offices in New York and Philadelphia.

Steel Tanks for San Juan Water-Works

In the construction of the water-works in San Juan, Porto Rico, it was found necessary to install three elevated tanks, one of them, shown in the above picture, having a capacity of 600,000 gallons and elevated 42 feet from the ground measured to the bottom of the tank. These three elevated steel tanks were manufactured in Pittsburgh, Pa., by the Pittsburgh Des Moines Steel Company, and erected by them at San Juan, Porto Rico, for the city.

A great many cities are taking advantage of the use of elevated steel tanks in increasing their water-supplies, because they can be readily fabricated and secured fully as quickly as tanks of any other material.

ONE OF THE THREE ELEVATED WATER TANKS IN SAN JUAN, PORTO RICO

THE FUN FUL LINE
PLAYGROUND EQUIPMENT

HOW ABOUT THAT PLAYGROUND DEVELOPMENT WHICH IS NEEDED IN YOUR COMMUNITY? WOULD YOU LIKE US TO HELP YOU GET THINGS STARTED?

We have "Everything for the Playground"

INCLUDING SLIDES, SWINGS, OCEAN WAVES, SEE-SAWS, GIANT STRIDES, OUTDOOR GYMNASIUM COMBINATIONS, ETC. ALSO A COMPLETE LINE OF ATHLETIC GOODS AT WHOLESALE PRICES. LET US FURNISH PLANS, SPECIFICATIONS AND ESTIMATES FOR YOUR ENTIRE DEVELOPMENT.

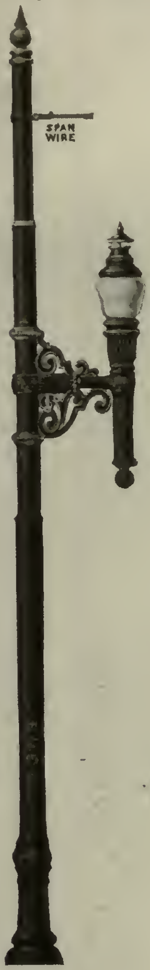
We are Recreation Engineers and Our Advice is at Your Disposal

WRITE FOR FREE BOOK

HILL-STANDARD COMPANY

216 FUN-FUL AVENUE
ANDERSON, INDIANA

Ornamental Lighting Standards



Many cities have improved the appearance of their streets by installing the Elreco lighting standards manufactured by the Electric Railway Equipment Company, of Cincinnati, Ohio. The accompanying illustration shows only one of a great variety of attractive models which have been designed by the company for use in all types of streets. The company also makes a specialty of producing a large variety of designs of combination railway and lighting poles, on the very sensible theory that there is no need to use two poles for supporting span wire and lighting bracket when one will do as well. Double the number of poles and you double the expense, double the curb obstruction, and detract considerably from the appearance of the street. A booklet which is issued by the company illustrates this point, and presents also a large number of illustrations of its various designs.

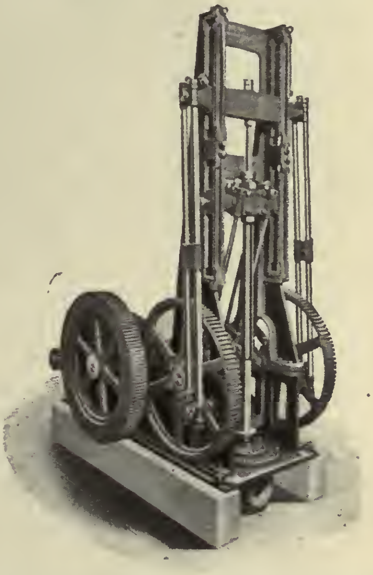
New Eastern Offices for Busch-Sulzer Bros.-Diesel Engine Company

The Busch-Sulzer Bros.-Diesel Engine Co., of St. Louis, announce that they have opened an eastern sales office at 60 Broadway, New York, in charge of George D. Pogue, Eastern Sales Agent, and Stanley Wright, Assistant.

Deep Well Pumps

Direct-connected deep well pumps are featured by A. D. Cook, manufacturer, Lawrenceburg, Ind. It is stated that the distinctive features possessed by this type are not found in other crank pumps in the market. The center of gravity is down close to the base plate, causing the pump to operate without any vibration and eliminating any tendency toward top-heaviness. This arrangement of the parts also makes the pump more accessible for oiling and inspection.

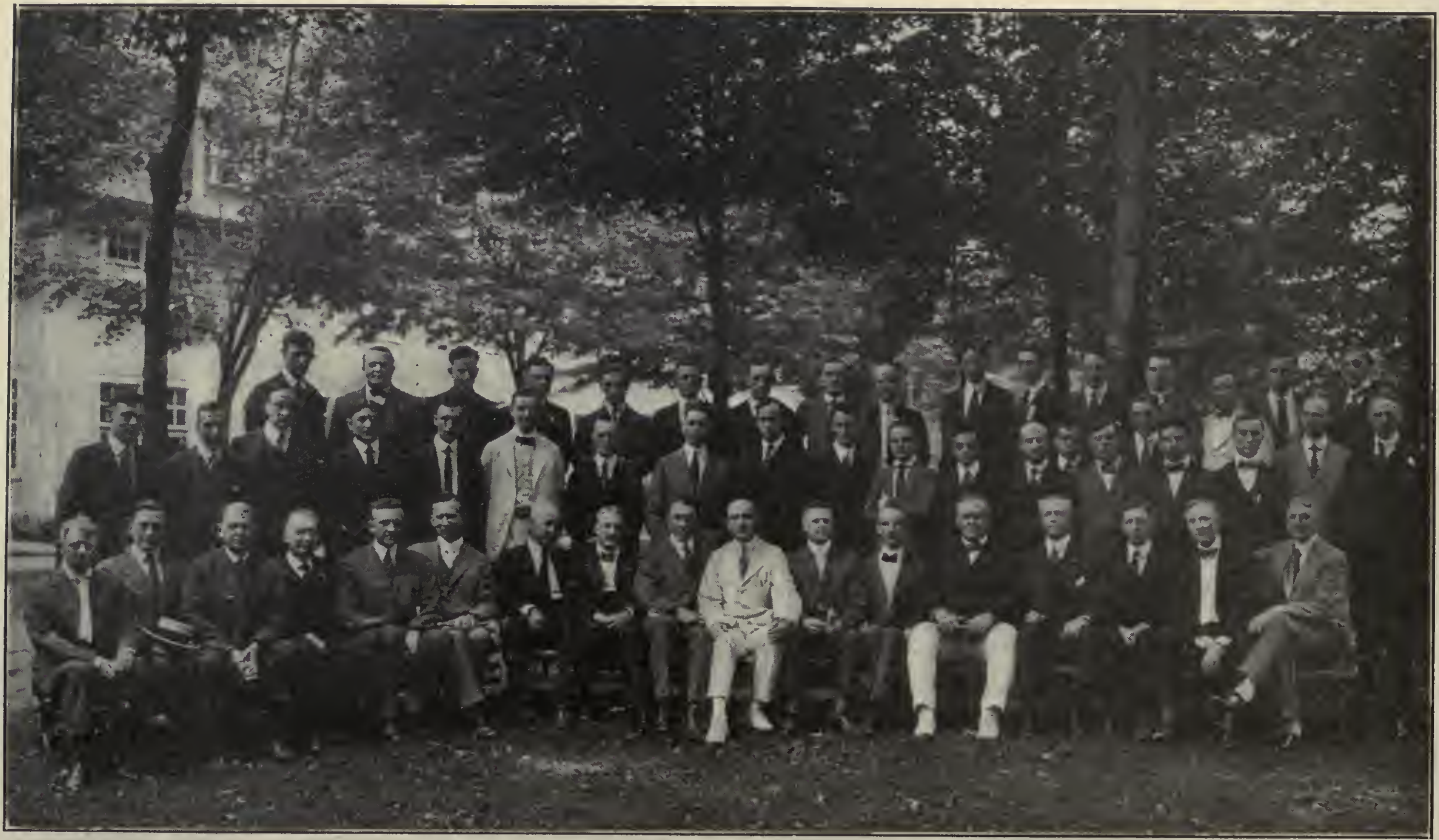
A feature of this pump contributing especially to its efficiency and quiet operation is that the main shaft is set off of the center of the well a distance equal to one-half the throw of the crank, so that on the up-stroke the crank pins are almost directly under the cross-heads, thus relieving the guides of side thrusts on the up-stroke of the cross-heads when the pump is doing all its work. By thus off-setting the crank shaft, the crack pins actually travel a greater distance on the up-stroke than they do on the down-stroke of the cross-heads; and as the speed is uniform for the entire revolution, the pump plungers are raised more slowly on the up-stroke when they are doing all the work, and are returned at a greater speed on the down-stroke when they are going down empty, securing economy of power in a very simple manner. This causes the strokes to overlap slightly, preventing the water column from coming to a dead stop at each revolution of the pump, as is the case in other crank pumps.



A DEEP WELL PUMP OF THE PLUNGER TYPE THAT OPERATES WITHOUT VIBRATION

AMERICAN-LA FRANCE CHEMICAL ENGINE ON FORD CHASSIS AT UNIONTOWN, KY.

Fifty-three Members of the American City Bureau Staff



This photograph was made July 22, 1919, at the Fifth Annual Session of the American City Bureau Summer School of Community Leadership, which was attended by more than two hundred and fifty men, most of whom are engaged in Chamber of Commerce work, from thirty states of the Union and from three provinces of Canada.

When writing to Advertisers please mention THE AMERICAN CITY.

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The American City
NEW YORK
OCTOBER, 1919

The Proposed City Plan of Winnetka, Illinois

By E. H. Bennett

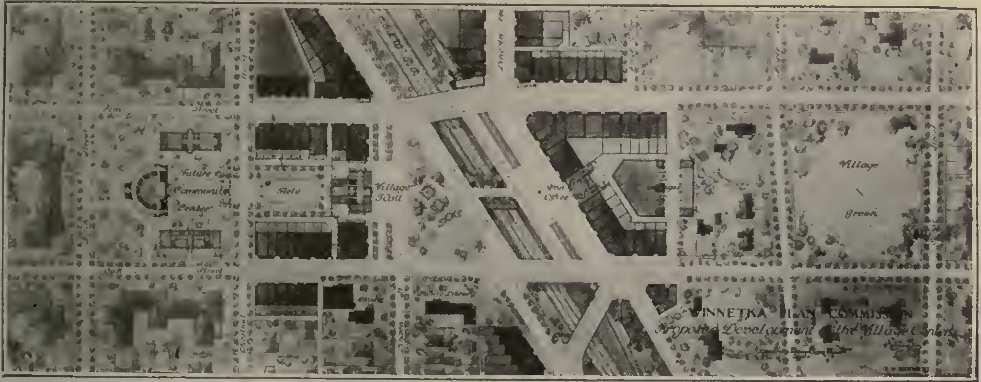
Consulting Architect, Chicago, Ill.

WINNETKA village, an attractive suburb of Chicago, has followed the lead of large and small cities in preparing a comprehensive plan—a plan, as will be seen from the drawings, of preservation rather than of expansion. The problems found are peculiar, and the solutions proposed have for this reason a special interest. The Plan Commission, composed of leading citizens under the chairmanship of Philip S. Post, has devoted more than a year of study to the project.

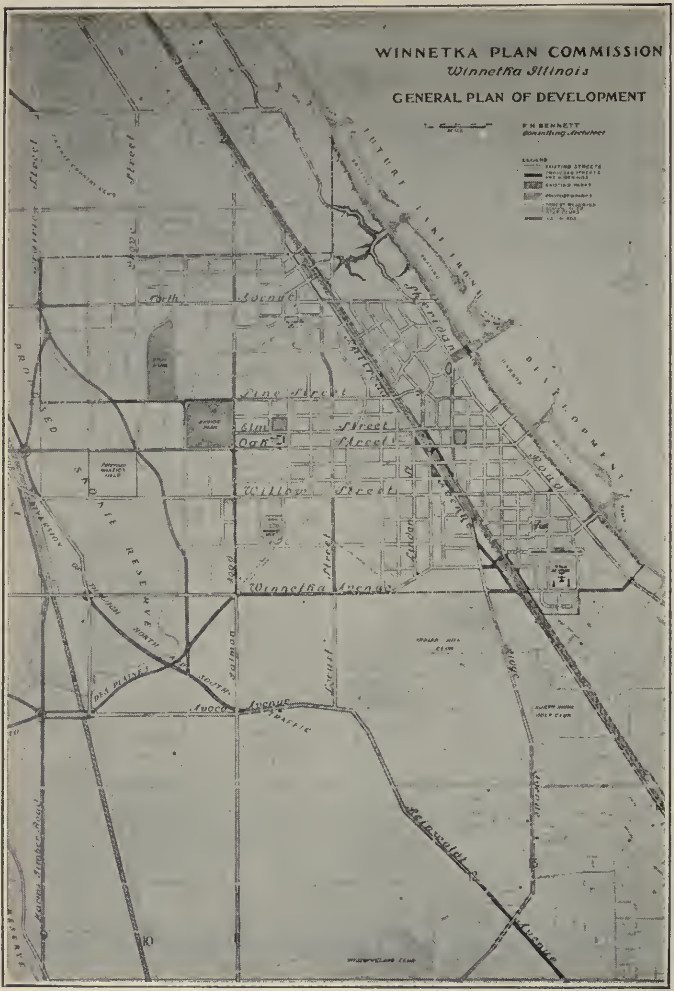
At a distance of 17 miles north of the center of Chicago, Winnetka has a frontage on Lake Michigan of 2½ miles. Its area within the corporate village limits is 2,300 acres, and its present population is about 6,000. The towns of Evanston, Wilmette and Kenilworth, lying between Winnetka and Chicago, are fully developed suburban residential property, forming a continuous built-up area. At Winnetka the more open country begins. Its attractiveness is due to its rural rather than suburban character. With the rapid growth of Chicago the pressure of population northward is very strong, and ultimately will transform the village into a closely built-up suburb unless its rural character is preserved thru the retention of large open spaces for parks and forest areas and by every other possible means. Preservation is the policy of the Plan Commission and the keynote of the plan now under consideration.

Relocating the Tracks

There are no industries in Winnetka. Its residents are mostly of the business and



PROPOSED DEVELOPMENT OF VILLAGE CENTER, WINNETKA, ILL.



GENERAL PLAN OF WINNETKA, ILL., SHOWING PROPOSED MOTOR HIGHWAYS

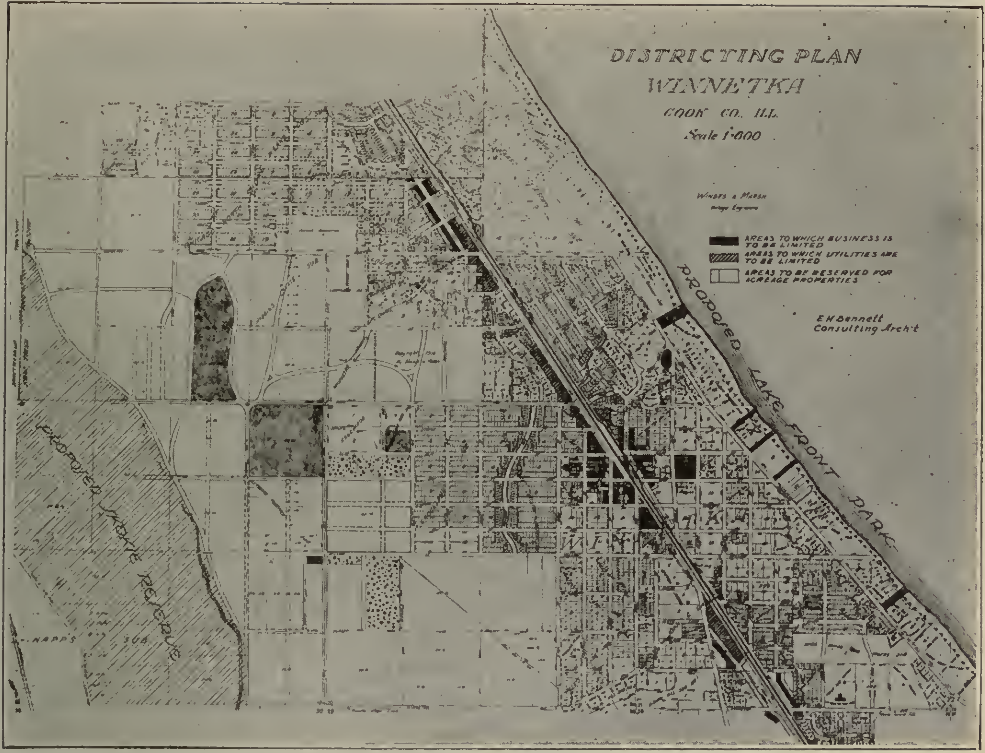
professional class, commuting by means of the Chicago & Northwestern R. R. to their Chicago offices. There is also the Chicago, North Shore and Milwaukee Electric line adjacent to the Chicago & Northwestern R. R. and connecting with the elevated lines of Chicago. But the frequent and excellent train service (382 trains, including electric, pass thru the village daily), the very thing upon which Winnetka is dependent, is not without its drawbacks. From early morning till late at night there is the noise of rushing trains. As there are eleven grade crossings, the whistling is almost constant.

Not only is grade separation necessary, but depression rather than elevation of tracks is required as a means of minimizing the noise. The proposed plan and report treat of this subject very fully and clearly, and show by means of profiles and diagrams that depression is not only desirable for the village but is practical from the standpoint of operation. It is shown that the additional cost of track depression over elevation would be a profitable investment for the community as a whole, not only because of the elimination of noise, but because the embankments required for elevation, even if most skillfully planted, cannot be successful, but will form a dividing wall thruout the length of the town.

Another problem which the plan successfully solves is the matter of handling the motor traffic, which has now become a nuisance, especially on Sundays and holidays. By a recent count, over 6,000 vehicles passed thru one of the residence streets in one day.

Establishing Motor Highways

The proposals now before the Plan Commission include the following suggestions: First, that a main thorofare be formed adjacent to the railroad, of sufficient capacity to receive all of the heavy trucking and much of the local automobile traffic. This artery exists in part, less than one-half mile of cutting being required to make it continuous. Secondly, that thru north-and-south motor traffic be diverted to the outer highways a mile or two west of the village. Several new connections are proposed, to make them conveniently accessible. These highways, which for the most part exist, when improved with hard surfaces would attract motorists from the congested village streets to the open farm country, where greater speed is permitted.


DISTRICTING PLAN
WINNETKA
COOK CO. ILL.
Scale 1"·600
AREAS TO WHICH BUSINESS IS TO BE LIMITED
AREAS TO WHICH UTILITIES ARE TO BE LIMITED
AREAS TO BE RESERVED FOR ACREAGE PROPERTIES
E H Bennett Consulting Arch't
PROPOSED LAKE FRONT PARK
PROPOSED FOREST PRESERVE

For this purpose a careful study of the general highway system of the North Shore towns was made, with special reference to establishing an outer circuit of highways around Chicago, affording also for Winnetka convenient access to the Fox River and Lake County to the west and to the Forest Preserves along the Des Plaines River toward the southwest.

Recreational Features

As to the park areas the plan makes generous provision both within the village limits and in the way of forest preserves in the Shokie lands immediately west. Of the former, two large tracts have already been acquired since the preliminary plan was made. Recommendations are included for the improvement of the lake shore, providing a harbor and making most of the frontage available for bathing, boating and for public recreation generally. A series of lagoons will afford still water for small boats and for skating. The development can be accomplished in stages, the piers first, to be followed eventually by the outer park strips.

Districting

Winnetka will probably be one of the first towns of Illinois to take advantage of the zoning law recently enacted by the state legislature. The zoning plan as proposed segregates residence and business districts, and, as factories are to be excluded altogether, special areas adjacent to the railroad are to be devoted to the storage of coal, food supplies and building materials. Garages, laundries and greenhouses would be provided for in special areas. Residential areas are divided into several classes, one of them for group houses, and another for single-family houses, the latter including large areas at considerable distance from the railroad stations where subdivision into small lots would be discouraged and if possible prevented. A minimum width of 50 feet for each lot is proposed.

Special study was given to the three railway stations and their approaches, the principal village center being at Winnetka Station and subordinate ones at Indian Hill and Hubbard Woods. One of the first improvements to be undertaken will be the construction of the Village Hall and of an auditorium as a war memorial.

The preliminary work towards acquiring property for the opening of Railroad Avenue, one of the major elements of the plan, is already well advanced.

Oregon's New City Planning Laws

By Gus. C. Moser

State Senator, Portland, Ore.

ENABLING legislation of great import to the future of Oregon cities was passed at the recent session of the Oregon State Legislature. At the request of various groups it was my privilege to introduce and secure the approval of both houses of the Legislature to three bills which make possible practical far-sighted planning for the future, and the adoption of building and zoning regulations that should make our cities convenient and comfortable.

The first of these new acts provides for the establishment of an advisory city planning commission in every city and town in the state, and gives this commission veto power on the filing of plats of new subdivisions, not only within the city but for six miles adjacent thereto. This means that the new streets and subdivisions adjoining cities which have planning commissions must conform with and tie up to the main thorofares and to the general plan of city growth, and makes it possible to prevent the evil effects of the former haphazard method, with streets that do not meet and rectangular subdivisions on steep hillsides where only contour streets can give the best grades.

The second act passed provides a procedure for the zoning or districting of cities under which "the city council may by ordinance regulate, restrict and segregate the location of industries, several classes of business, trades or callings, the location of apartment or tenement houses, club houses, group residences, two-family dwellings, single-family dwellings and the several classes of public and semi-public buildings, and the location of buildings or property designed for specified uses, and may divide the city into districts of such number, shape and area as the council may deem best suited to carry out the purposes of this act.

"Such regulations shall be designed to promote the public health, safety and general welfare. The council shall give reasonable consideration, among other things, to the character of the district, its peculiar suitability for particular uses, the conservation of property values and the direction of building development in accordance with a well-considered plan.

"The council may place reasonable regulations and limitations upon the height and bulk of buildings hereafter erected, and regulate and determine the area of yards, courts and other open spaces, having due regard to the nature of the use and occupancy in each case.

"In municipalities having a city planning commission, the council shall require such commission to recommend the boundaries of such districts and appropriate regulations and restrictions to be enforced therein. Such commission shall make a tentative report and hold public hearings thereon at such times and places as said council shall require before submitting its final report. Said council shall not hereafter determine the boundaries of any district or impose any regulations until after the final report of the city planning commission is filed with the city clerk."

This act is similar to California and New York statutes, and, if properly used, should do much to stabilize land values, to protect the home and home neighborhoods from the intrusion of undesirable and depreciating types and uses of buildings, and to make possible the establishment of a safe place for industries. The exercise of the police power being a constitutional grant to municipal governments, this act simply defines and provides a procedure for zoning which will protect property owners against hasty or unnoticed action by the city council, in this very vital matter of property rights and community welfare.

The third act passed provides a procedure for the establishment of building setback lines by city councils, something that is continually urged by property owners in residence districts. As this seems to be more a matter of eminent domain than of police power, a different form of proceeding from that employed in the zoning act given above seems advisable, and the two powers should not be confused.

Modern Systems of Street Lighting Combine Beauty and Utility

By P. Y. Danley

WITH the conclusion of the war and the return of normal conditions, the attention of central stations and municipal governments has again been directed to the problem of furnishing suitable street lighting equipment to take care of extensions occasioned by the normal growth of population and to replace obsolete and inefficient types of equipment. For several years this phase of municipal activity has been considerably neglected, and only such extensions and replacements as seemed to be absolutely unavoidable have been made. Curtailment in the use of electric power for lighting, particularly of an ornamental variety, and restrictions on expenditures for purposes not considered essential in winning the war have prevented any great activity in municipal lighting during the period of the war. Many projects opened up just prior to the war were abandoned, and needed construction and development along this line have been allowed to accumulate until the present time. As a result, there is now a great deal of such work which must be done at once, and street lighting problems have been receiving an unusual amount of attention for the past few months.

Increasing Popularity of Street Lighting

Street lighting, which is of ornamental as well as utilitarian value, has been growing steadily in popularity, due mainly to the following reasons:

(1) It is of recognized value to business houses in attracting trade.
(2) Civic pride and the requirements of good municipal government demand it.
(3) The development of incandescent lamps of higher efficiency has made it possible to maintain such lighting at moderate cost.
(4) Refinements made in lighting units have effected more uniform and efficient distribution of light.

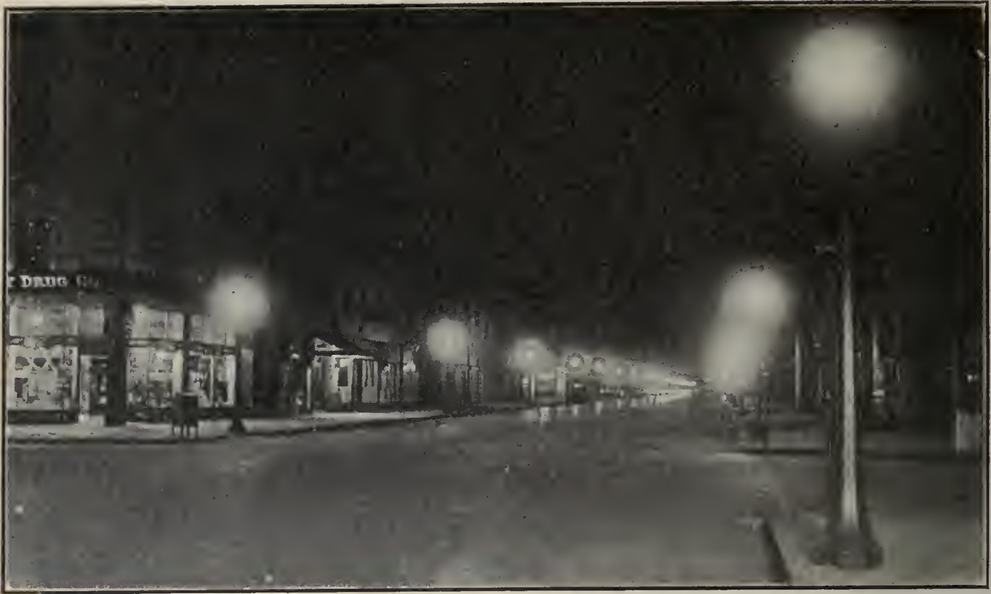
Merchants have long realized the advantage of being located on well-lighted streets, and have always been among the first to advocate street lighting improvements. Crowds are attracted by the brightest streets and spend their money with the merchants along such streets. The town having a brilliantly lighted business section is more prosperous commercially, because its inhabitants are inclined to spend more of their time on the business streets.

There is always more or less rivalry between neighboring towns and cities in the matter of beautifying their streets and making them more attractive to business houses and dwellers alike. The natural desire of every public-spirited citizen that his town or community shall be the most progressive and up-to-date in every respect, and the desire to see it thrive and grow, furnish powerful incentives for improvement in street lighting. Furthermore, it is realized that adequate street lighting is of value as a police measure in the prevention of crime and in promoting the public welfare and safety. Crime flourishes in the poorly lighted sections, and evil-doers shun the light. Police protection is made more effective and far-reaching with good illumination.

Prior to the development of the gas-filled incandescent lamp, advancement in the street lighting art was retarded because of the relatively low efficiency of the older types of incandescent lamps. The efficiency of some of the arc lamps was so much better that they were retained in spite of certain inherent disadvantages, such as unsteadiness of the light, complicated mechanisms, and difficulty of maintenance. However, the new gas-filled Mazda C lamps have eliminated these disadvantages and given added impetus to street lighting development.

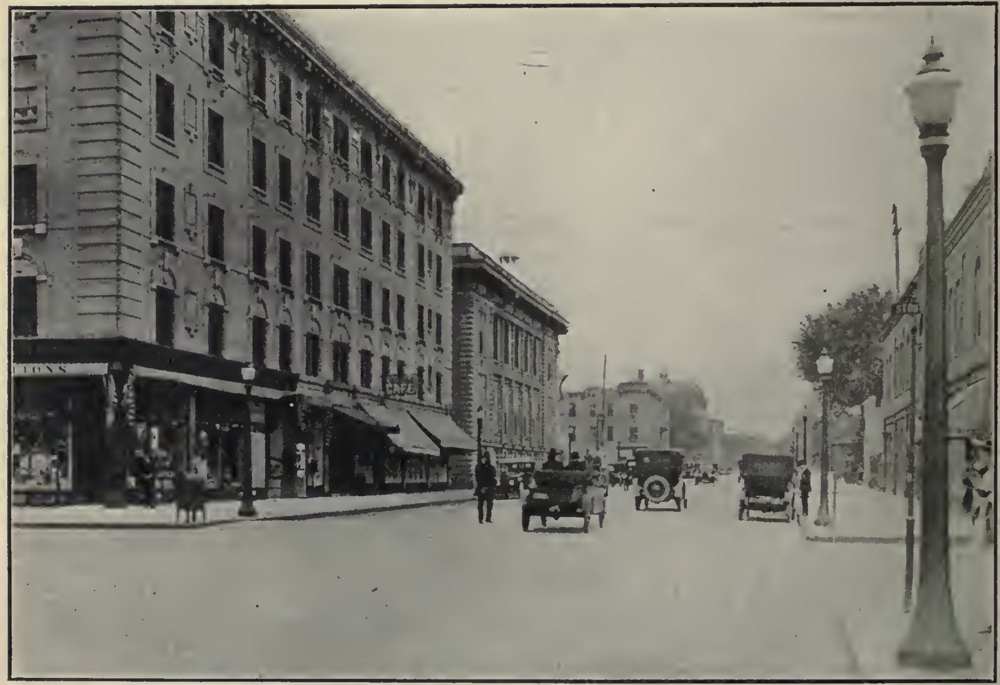
Single Post Replaces Cluster Lighting

One of the results of the adaptation of the high-efficiency lamps for street lighting has been the development of more artistic and harmonious designs in ornamental posts using a single high-power illuminant. In the past, ornamental post lighting had always been accomplished by means of



NIGHT SCENE ON FOURTEENTH STREET, DENVER, COLO.
The street is well-illuminated and attractive

cluster posts using two, three, four or five small lamps connected in multiple on one post. These small lamps were obviously inefficient and the system expensive to maintain on account of the large amount of absorption and the renewal cost of lamps



SAME SCENE ON FOURTEENTH STREET, DENVER, COLO., IN DAYLIGHT
The standards are pleasing in appearance and harmonize with the general vista

and glassware. The most efficient of the smaller multiple lamps take considerably more than a watt per candle-power, while the high-current Mazda C lamps burning in series require as low as one-half watt per candle. In addition to its many advantages from an operating standpoint, the single-light post is admittedly superior in appearance to the cluster post, adding to the beauty of the street under both day and night conditions. It relieves the street of the crowded appearance resulting from too many small lamps and gives an effect of simplicity and elegance combined with illuminating efficiency of the highest order. Cluster posts have been objected to on the grounds that they are often only partly illuminated on account of the burning out of lamps.

Noteworthy advancement has also been made in the design of pendent fixtures, whereby refracting or diffusing glassware may be used to suit the requirements of each individual case. It is thus possible to control the distribution of light so that it may be utilized to the best advantage.

Lighting System Varies With District

City streets may be divided roughly into three classes according to the amount of light required and the type of fixtures generally employed: 1, business districts; 2, main residence streets; and 3, side streets and outlying districts.

Business districts are usually lighted, at least in part, by "White Way" systems, using ornamental posts at intervals of 75 or 100 feet on both sides of the street. The posts may be "staggered" or placed directly opposite each other, depending somewhat on the width of the street, the spacing distance, and the amount of light desired. Power is distributed to the posts by means of armored cable, usually buried under the paving at the edge of the curb. The posts are preferably connected in series on a constant current circuit, so that only a single wire need be run from post to post, and the current is controlled by a moving coil regulator located at the nearest distributing center. Lamps ranging from 400- to 1,000-candle-power are commonly used. A higher intensity of light is usually desired than is necessary from a strictly utilitarian standpoint. One of the principal objects is ornamentation, and considerations of economy and scientific arrangement are often ignored. The popular conception of a "White Way" implies an intensity of light almost comparable with daylight, and to fulfill this condition the lamps are mounted not more than 12 or 13 feet above the sidewalk. It seems to be pretty well agreed among competent observers that mounting heights of 20 feet or more produce the highest visibility and give the most satisfactory results in general, but such mounting heights are not usually considered compatible with the requirements of real "White Way" lighting.

Night and day views of 14th Street, Denver, Colo., are shown herewith. The standards are equipped with 600-candle-power lamps, and stand approximately 75 feet apart, directly opposite each other. As seen from the night view, the street has a neat, uncrowded appearance, and there are no unsightly arms projecting from the posts to obstruct the light and cast shadows. It is not uncommon for motor trucks and other heavy vehicles to collide with posts along the sidewalk, and ornamental posts must be constructed to withstand such abuse. It is easily possible to build posts of cast iron with sufficient strength to resist a shearing stress of 30,000 pounds per square inch, and such posts, if protected by weatherproof paint, offer excellent resistance to corrosion and may be made to last indefinitely.

The detailed construction of the post top most commonly used is designed so that a large percentage of the light is directed to the surface of the street and sidewalk, altho there is enough light available in an upward direction to illuminate the façades of buildings. The enclosing globe is of sufficient density to conceal the lamp filament and soften the light without greatly reducing the efficiency by absorption. The porcelain-enameled steel reflector placed over the lamp saves a good part of the light by redirecting most of the upward rays, which would otherwise be lost by absorption in the top of the fixture. The entire top is designed with a view to obtaining the maximum of useful light from the lamp and at the same time having a distinctive and ornate appearance.

It is often the case that business streets are traversed by trolley lines, necessitating the use of trolley poles on the sidewalks. Where ornamental posts are installed in addition to the trolley poles, it sometimes spoils the symmetry of the street and gives it a crowded appearance. This may be avoided by the use of ornamental trolley brackets. Such an installation is shown in the accompanying photograph, where the five-light cluster posts are being replaced by single-light bracket units mounted on the trolley poles. A considerable increase in illumination will thus be obtained at a lower cost, and without marring the beauty of the street. The bracket is essentially the same as an ornamental post as far as the lighting element is concerned, and differs only in the method of support.

Boulevard Lighting

In many cities ornamental systems are used on the most popular boulevards, carrying a relatively large amount of traffic. In such cases, greater economy must be practiced than in the business district; a somewhat smaller lamp is used, and the spacing distance increased. By "staggering" the posts, it is possible to widen the spacing and maintain a more uniform intensity of light.

Lighting the Residence Streets

In lighting residence streets, the main object is to furnish enough light to see by, without special regard to ornamentation or advertising effect. It must be possible to make one's way about at night without inconvenience or danger from collision or attack. To accomplish this result at a minimum of first cost and maintenance expense is the problem of residence street lighting, and any features tending toward a more efficient utilization of the light are favored by the designer. By higher mounting of the lamps—20 to 25 feet above the street—the light source is removed from the range of vision, resulting in greater visibility. It has been estimated that the hanging of lamps unnecessarily low has the effect of wasting probably half of the light emitted, because the ability of the eye to see objects beyond the light has been impaired in that proportion. Furthermore, high mounting of the lamps causes the light to spread farther up and down the street, tending toward greater uniformity. Spacing distances ranging from 150 and 200 to 400 feet are commonly used. This feature is determined largely by the size of lamp, and the type of glassware used with the fixtures. These lights are operated on series circuits, and when equipped with small auto current transformers make use of the high-efficiency 15- and 20-ampere Mazda C lamps.

OLD-STYLE CLUSTER LIGHTS WHICH ARE BEING REPLACED BY SINGLE LAMPS MOUNTED ON TROLLEY POLES, AS SHOWN AT LEFT

Because of the high current, it is possible to build the lamps with short, stocky filaments capable of operating at a more intense heat than the slender, delicate filaments of the low-current lamp. Temperature is the determining factor in efficiency of light production. The fixture casing is made of cast iron galvanized and coated with weatherproof paint, so as to withstand the most severe conditions of weather and handling. The fixtures may be suspended from mast arms of sufficient length to clear the trees, or from a cable stretched across the street.

Choosing the Glassware Medium

The glassware used with pendent fixtures of this kind may be one of two common types known as refracting and diffusing glassware. Refractors, as the name implies,

ARC LAMP SUSPENDED FROM MAST ARM OF SUFFICIENT LENGTH TO CLEAR TREES

redirect the light by bending the rays, and cause a large portion of the light to shine at an angle of 10 or 15 degrees below the horizontal, thus increasing the intensity at points midway between the lamps. With diffusing glassware, however, no attempt is made to change the direction of the light but simply to break up the rays and soften the light by furnishing a light source of lower intrinsic brilliancy without losing more than 15 per cent of the light by absorption. With refractors, the ratio of maximum to minimum intensity of illumination on the street surface is relatively low. With certain types of refractors it is possible to have the best lighted areas on the street not more than eight times as bright as the darkest points. With diffusing glassware, this ratio may easily be several hundred to one, unless the lamps are placed unreasonably close.

The relative merits of the two types of glassware have been the subject of a great deal of discussion among illuminating engineers for a number of years, some claiming that uniformity of intensity is not essential or even desirable for good visibility and that objects midway between lamps may be distinguished by their dark outlines against the light background of the next lamp, and others maintaining that objects can be seen and recognized more readily and accurately by the direct illumination they receive than by their silhouettes against a light background.

It is now pretty generally believed that there are some valuable features in connection with each of these types and that most satisfactory results can be obtained with fixtures which combine the two principles. It is thought to be inadvisable to rely solely on silhouette lighting with a high ratio of intensities, because it is difficult for the eye to accommodate itself to widely varying intensities, and, furthermore, a certain amount of direct illumination is essential in distinguishing the details of an object or recognizing a person. A number of methods have been devised for combining the principles of refraction and diffusion, and one of these is the skirted type refractor. The upper portion of the refractor is made up of the usual refractor prisms for redirecting the light, while the lower section is simply a skirt of diffusing glass.

The prismatic section serves to increase the horizontal intensity and the illumination at points midway between the lamps, while the diffusing skirt softens the light which strikes the street around the lamp, avoiding glare and strengthening the illumination near the lamp to the extent of permitting some degree of silhouette effect.

The less important residence streets and outlying districts, where traffic is light, are usually lighted by streethoods suitable for lamps ranging from 60 to 400-candlepower. They are ordinarily operated on 6.6 ampere, with a film cut-out socket, which automatically short-circuits the lamp when it burns out, thus protecting the other lamps on the circuit against interruption.

The fixtures may be suspended from brackets, mast arms or cable, as the local conditions may require. Streethoods have been used mostly without glassware in the past, in spite of the glare and the objectionable appearance of the bare lamp, because of the increased cost involved in equipping the fixtures with glassware.

Good street lighting is the best policeman. Where there is ample light there are fewer crimes and accidents than where the illumination is sparse.

Newark, N. J., Contracts for Garbage Disposal

By New Contract City Collects and Delivers Garbage to Piggery

By James W. Costello
Engineering Supervisor, Bureau of Street Cleaning and Refuse Collection, Newark, N J.

A CONTRACT for the purchase and final disposition of garbage by feeding was awarded to the National Utilization Company by the city of Newark on July 3, 1919, for a period of five years commencing September 1, 1919. The price to be paid to the city for each ton of garbage delivered is eight times the price per pound of live killing hogs on the Chicago market, as determined by averaging the top price for each month.

The piggery is to be located along the shore of the Passaic River, and the city wagons are to deliver all garbage to the feeding site, where it will be weighed. The city agrees to the enforcement of existing ordinances, to effect a good primary separation, and also agrees to endeavor to pass ordinances whereby the contractor will receive all hotel and restaurant garbage.

The collection of all city refuse was done by contract until 1916, when the contractor terminated the contract on the ground that the separation ordinance was not enforced. The contract was then taken over and carried on by municipal forces. For several years past there has been a rather unsuccessful attempt to separate garbage from other refuse. In March, 1919, a new ordinance was introduced requiring the separation of ashes, rubbish and garbage. At the present time separation is effective thruout the city, collection being made in refuse wagons having separate compartments. A police officer and inspector is assigned to each district to enforce this ordinance, and the results have been very gratifying.

The erection of a reduction plant of 150-ton capacity was contemplated, but the present cost of building material is considered prohibitive. An estimate received from one company was $750,000 exclusive of the cost of the site. The city has some 6 square miles of meadow land, and all classes of refuse have formerly been dumped on this land. There is a contract for the salvaging of the material, for which privilege the city receives $3,000 annually. The contractor also supplies all labor necessary to keep the dumps and the roads leading thereto in good working condition. Now that separation is completed in the entire city, it is planned to erect a utilization plant for rubbish and to deposit only ashes on the meadow land. The area of the city is 23 square miles, and the estimated population 450,000. It is estimated that 5,000 hogs will be required to consume the maximum amount of garbage during the peak months of summer.

On account of the limited area available at the site of the piggery, intensive methods will be employed. The hogs will be housed in unit buildings 100 x 100 feet, which will accommodate from 800 to 1,000 hogs. A double concrete driveway and feeding floor 24 feet wide extends thru the center of each building, with a gutter on each outer edge next the pens. The gutters discharge into large grease traps, to prevent solids reaching the sewer. The pens are arranged on either side of the driveway, having a slight pitch toward the gutters. There are five pens on each side equipped with automatic drinking fountains. Each pen opens into a yard 50 feet deep. The houses are of saw-tooth type, with windows the entire length below the eaves and in the peak.

Rout the Rat

by starving him, thru the use of rat-proof receptacles for food, and covered metal garbage cans.

Lessons From the Police "Strikes"

THE strikes of policemen are not isolated outbreaks, but symptoms of long-standing grievances to which American cities must give heed.

The occasion of the Boston strike was the suspension by the Police Commissioner of nineteen policemen, all officers in, and organizers of, a police union formed in defiance of his express orders, which were supported by the Mayor and the Governor. The readers of THE AMERICAN CITY are doubtless familiar with the story of violence, pillage, and loss of life that ensued when the protection of the police ceased and criminals flocked to the city to make the most of their opportunities. This was checked only by the determined action of Governor Coolidge by means of the state militia and the organization of a volunteer police force made up of courageous, public-spirited citizens.

Prior to the Boston affair, the Commissioners of the District of Columbia had refused to permit the organization of a union of police in Washington, a position in which they were subsequently upheld by President Wilson, in the following words:

> "I am desirous, as you are, of dealing with the police force in the most just and generous way, but I think that any association of the police force of the Capital City, or of any great city, whose object is to bring pressure upon the public or the community such as will endanger the public peace or embarrass the maintenance of order should in no case be countenanced or permitted."

At the President's suggestion, action on the grievances of the Washington police was deferred pending his return to Washington and the Industrial Conference of October 6.

About the same time the police and firemen of Macon, Ga., refused to yield to the demands of the local Civil Service Commission to disband their unions. The police, according to press reports, hooted the order, and the members of the firemen's union announced that they would "only be put out with guns." Two chiefs of police have failed to compel obedience and have resigned. The case is still unsettled.

Before passing judgment, let us pause to examine the grievances of the men and the issues raised by their conduct.

There is no doubt that conditions in both the police and fire services have been far from ideal, and that the expense of buying uniforms at present prices, the restriction upon places of residence, and, in many cities, the deductions from scanty pay for pension fund dues, are particularly hard in view of the high cost of living. Moreover, it is a notorious fact that the salaries paid to policemen and firemen in many cities, as well as to teachers and other public servants, are a disgraceful commentary upon our complacent indifference to the faithful service customarily rendered by such employes.

But granting the justice of many of these claims, are the methods by which the police and firemen have sought to remedy these conditions justifiable?

Three issues are raised: the right of police and firemen to organize; their right to affiliate with a nationally organized labor body; and, most vital of all, their right to strike.

1. *The right to organize.*—The constitutional guarantee of the right "peaceably to assemble and petition the Government for a redress of grievances" would seem to indicate very clearly the fundamental right of police and firemen, as well as other citizens, to organize for the improvement of the conditions under which they perform their duties. This is recognized by the Commissioners of the District of Columbia in their deliberately worded statement:

> "They approve heartily of the principle of collective bargaining, and they welcome the organization of members of the police force for purposes of collective representation, mutual support and organized effort to increase their salaries or improve their working conditions."

2. *The right to affiliate with a nationally organized labor body.*—On this point the Commissioners of the District of Columbia are equally definite:

> "They must withhold their consent from any project to connect such an organization of members of the Police Department with any other labor organization.
>
> "The fact that the policeman's union (in Washington) is bound by a 'no-strike' provision is an earnest of the intention of its members not to resort to a strike as a weapon of compelling its demands, but if it be affiliated with other organizations which do contemplate the use of a strike in an emergency, every

member of the police force who is a member of the union would be liable to the charge, however falsely made, of favoritism in the performance of duty in the event of industrial trouble involving the organization with which it is affiliated."

A policeman is morally obligated by his oath of office to assist in the preservation of law and order. As such, it is inconceivable that he could serve two masters, one of which, by its very nature, must ever represent, not all the people, but a class. A police department cannot fulfill its duty to the public if its members are subject, even to the slightest degree, to the direction of an organization outside the department not responsible to the public. The absolute subordination of armed force to civil authority as representative of all the people has been a fundamental belief of the American people since the adoption of the Constitution. It cannot be compromised, for it is the very essence of security to persons and property, and any change by which a separate and inevitable conflicting allegiance would be introduced to lessen the direct responsibility of the police to the people would be intolerable.

3. *The right of the police to strike.*—President Wilson, in his speech at Helena, Mont., on September 11, set forth the only possible answer to this question when he said:

> "I want to say this—that a strike of the policemen of a great city, leaving that city at the mercy of an army of thugs, is a crime against civilization.
>
> "In my judgment the obligation of a policeman is as sacred and direct as the obligation of a soldier. He is a public servant, not a private employe, and the whole honor of the community is in his hands. He has no right to prefer any private advantage to the public safety.
>
> "I hope that that lesson will be burned in so that it will never again be forgotten, because the pride of America is that it can exercise self-control."

That his position is heartily concurred in by thoughtful city employes is evident from the following resolution adopted by 643 officers of the New York City Fire Department on September 15:

> "The members of the uniformed force of the Fire Department being public officials serving as a force of public safety, we believe that any attempt of an organized effort on the part of such force to engage in a strike under any circumstances would be akin to mutiny and desertion of posts in time of danger, which would not only result in an undue menace to the lives and property of the citizens of the city, but would also be an unlawful proceeding and a crime against civilization and government."

The Honor Legion (1,100 strong) of the New York Police Department on October 1 adopted a similar resolution.

Governor Coolidge, in referring to the Boston strike and subsequent efforts by former policemen to prevent the recruiting of a new police force, does a like public service when he says:

> "The authority of the Commonwealth cannot be intimidated or coerced. It cannot be compromised. To place the maintenance of the public security in the hands of a body of men who have attempted to destroy it would be to flout the sovereignty of the law the people have made. . . . Every attempt to prevent the formation of a new police force is a blow at the Government. That way treason lies."

What Ought to Be Done?

Obviously it should be made very evident to municipal employes that the regularly constituted authorities in American cities are prepared to remove just grievances, but are also fully prepared to remove, in another sense, every man who, in disregard of his sworn duty, undertakes to take the law into his own hands.

It is equally obvious that the morale of the police and firemen will suffer if they do not get a "square deal." It is not so easy to recruit for either service as it was. Without first-class police and fire services, every city would soon be in difficulties, and in the end at the mercy of the lawless elements. The case as presented for increases of pay is so sound, so convincing, that city councils generally should act promptly. Many cities have already done so, and Boston, for example, is recruiting its new police force on a higher pay basis.

But while justice should be done without delay, it should be made unmistakably plain that no American city will tolerate divided allegiance or confess itself helpless against a violent minority. If the riots in Boston and the defiance of the police and firemen in Macon drive this lesson home, these disturbances, regrettable as they are, may yet prove to be of real value as an object lesson to the nation.

SKETCH OF NEW BRIDGE AT SCHENECTADY, N. Y., CALLED "THE GREAT WESTERN GATEWAY" BECAUSE OF THE WIDE FIELDS IT WILL OPEN IN MOTOR TRANSPORTATION

The "Great Western Gateway"

This New Bridge Will Bring Greater Industrial Expansion to Schenectady and the Surrounding Territory

By Philip H. Holbrook

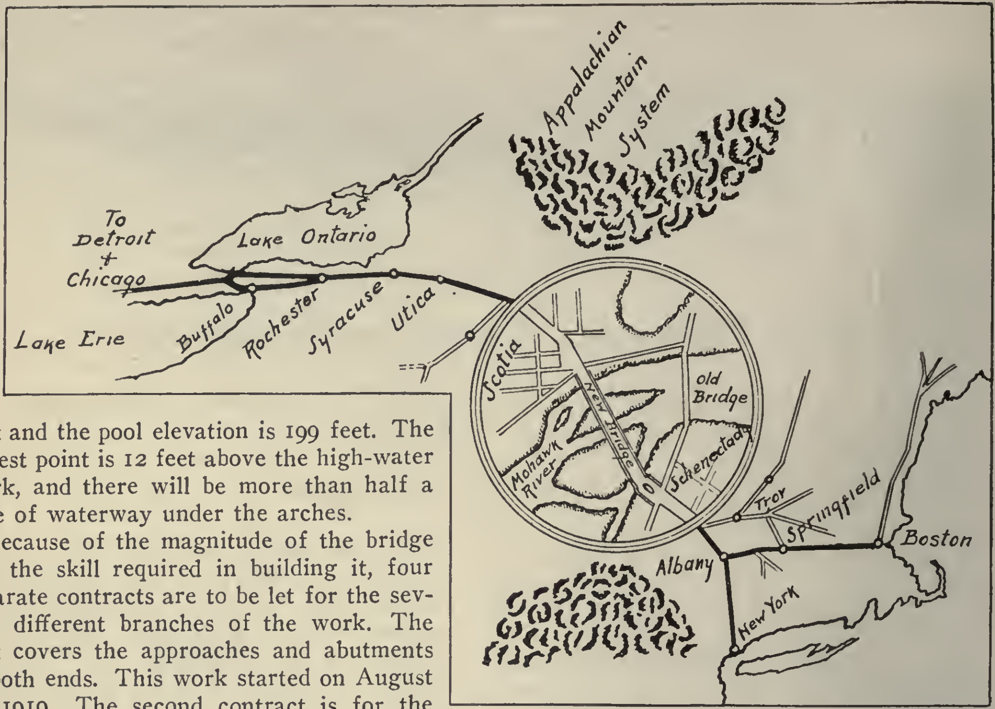
ON May 15, 1919, Governor Alfred E. Smith, of New York, signed a bill providing for the erection of a bridge across the Mohawk River and the New York State barge canal, to take the place of the present unsafe and inadequate Schenectady-Scotia toll-bridge. This new bridge, to be called the "Great Western Gateway," will be among the world's largest reinforced concrete structures, and will, in its construction, call forth some of America's best engineers. The building of such a bridge at this time follows closely the reconstruction policy of the state of New York, and will furnish employment to a great many men in a locality where labor conditions at present are unfavorable.

Schenectady, the point at which the new bridge will cross the Mohawk River, is a growing industrial city. It is the home of the General Electric Company, also of the American Locomotive Company, and has a population of 100,000. Situated in the east-central part of the state of New York, it affords the only break in the Appalachian Mountains from Maine to Alabama, and hence provides a natural gateway to the West. Traveling from Buffalo to New York City and Boston, whether by rail, the Erie Canal or auto truck, one must pass thru Schenectady.

The present bridge is an iron affair 900 feet long and 20 feet wide. The original bridge was built in 1806; in 1871 it was rebuilt, but to-day, with its limit of 4-ton loads and 4 miles per hour, it has outlived its usefulness.

The Design of the Bridge

The new gateway is to be a reinforced concrete structure of the latest design, built, under the most exacting specifications and contracts, by the best engineers of the day. It will be 4,436 feet long and 40 feet wide and will contain 24 arches. Approaching from the Schenectady side there will be, for the first 300 feet, a parkway. This parkway will be 100 feet wide with a grassed reservation in the center, and flanking this will be a 20-foot roadway for vehicular travel. On both sides of this roadway there will be a 10-foot grassed reservation, on either side of which a 10-foot concrete sidewalk will extend to the retaining wall. From the Schenectady abutment to the Scotia abutment there will be twenty-four spans, of lengths varying from 106 to 212 feet. The first four spans, which cross the terminal channel to the pier on Van Slyck Island, are 106 feet each. Here the bridge turns at an angle of 54 degrees, crossing the island with three 110-foot, one 117-foot and four 120-foot spans, each on a skew of 18 degrees. Over the barge canal one 212-foot span is used. From the far side of the barge canal to the Scotia abutment eleven 120-foot spans are used. This structure, between the two abutments, is divided into five sections by two anchor piers and the massive channel span. The Scotia approach will be 940 feet long, and, altho not built similar to the Schenectady approach, will be very attractive. All the spans are of the open-spandrel rib type. The maximum navigable elevation is 218.2



MAP SHOWING TERRITORY WHICH WILL BENEFIT BY NEW BRIDGE

feet and the pool elevation is 199 feet. The lowest point is 12 feet above the high-water mark, and there will be more than half a mile of waterway under the arches.

Because of the magnitude of the bridge and the skill required in building it, four separate contracts are to be let for the several different branches of the work. The first covers the approaches and abutments at both ends. This work started on August 15, 1919. The second contract is for the excavation work and the foundations of all piers and abutments, exclusive of the two end ones. The third contract takes in the placing of all concrete above the foundation lines, including arches and balustrades in the main portion of the structure. The last contract is for the pavements and electric light poles. All this work is to be done by the fall of 1921.

The Cost

The first estimated cost of the bridge was $1,420,000, but the increased cost of materials and labor made a second estimate necessary. This estimate was $1,735,000, which figure stands to-day. The cost is to be divided between the state of New York, the city and county of Schenectady and the town of Scotia. The city of Schenectady pays for its approach, estimated at $112,000, and all over $50,000 which the Scotia approach shall cost. The county of Schenectady pays $100,000. From the old barge canal fund there is an available fund of $500,000. The state of New York will pay the remainder.

Public Activities of New York State To Be Shown in Free Motion Pictures

Motion pictures depicting some of the vital problems facing the public and the administration of New York State to-day are to be shown free, from trucks in every city and town in the state, under the direction of the chambers of commerce of the various towns. This plan was decided upon at a conference held a short time ago by Governor Smith, executives of the Reconstruction Commission, Dr. Francis Holley of Washington, Director of the Bureau of Commercial Economics, and Harry Levey, head of the industrial and educational departments of the Universal Film Company. Arrangements for the exhibitions are in charge of Mrs. Henry Moskowitz, Secretary of the Reconstruction Commission.

Food problems, the housing question in industrial communities, control of the milk supply, public health, distribution of hydro-electric power, highway development, rural and intercity motor express, and Americanization are some of the topics upon which pictures will be built. Other subjects planned for the near future are the methods of operation of the state penal and charitable institutions, and the activities of the Departments of Public Markets and Weights and Measures.

The Port of Seattle Municipal Grain Elevators

By Robert H. Moulton

THE first municipal grain elevator to be built in the United States is in Seattle, Wash., a city of 300,000 people, located on Puget Sound near the Pacific Ocean. Washington is the largest wheat producer west of North Dakota and Kansas, and Seattle has originated a new system of elevator and warehouse methods. It has a million-bushel public grain elevator built by the sale of Port District bonds to provide a tide-water outlet for the sixty million bushels of wheat raised in the Pacific Northwest, and the grain is expected to move chiefly thru the Panama Canal to the Atlantic Coast and Europe.

The grain elevator is a reinforced concrete, fire-proof building, and consists of 55 circular bins of 16,000 bushels each, 46 interspace bins of 3,600 bushels each, and 32 workhouse bins of 1,600 bushels each, the total storage capacity being 1,100,000 bushels. The height of the storage bins is 90 feet, and of the workhouse 165 feet. This is the highest solid concrete grain elevator in the United States. The bulk receiving capacity per day of 24 hours is 95 cars, and the bulk shipping capacity per hour is 20,000 bushels. Bulk grain is delivered from the elevator to the conveyor house on the roof of the Hanford Street cargo shed, where it is spouted into vessels by means of two traveling cranes, anywhere along the 780-foot second-floor frontage of the shed. The cargo shed is 90 feet wide by 1,300 feet in length on the first floor, the total area being 175,000 square feet and the contents 3,200,000 cubic feet. Both floors are lighted with continuous rows of windows 5 feet high, and with 300 electric lamps for night work. All the machinery of the elevator is of the most modern type and is driven by electricity.

The Port of Seattle District was created September 5, 1911, by a vote of the people of King County, Washington, under authority of the Ports District Act of 1911. Port affairs are administered by three commissioners, chosen by electors of the entire county for terms of three years. The commissioners serve without compensation, and one commissioner retires each year to preclude sudden changes in Port policy.

The public terminal improvements comprise six groups of port utilities. These "terminals" include wharves and cargo sheds, concrete warehouses, cold storage plants, the million-bushel grain elevator, fish handling and freezing facilities, ice manufacturing equipment, reservoirs and bulking equipment for Oriental oils, marine ways, mooring basins and net warehouse accommodations for fishing fleets, together with electric and steam traveling cargo cranes, 100-ton sheer-leg derricks, electric tractors and truck trains, and other modern freight-handling devices. Almost nine miles

SEATTLE'S 1,000,000-BUSHEL MUNICIPAL CONCRETE GRAIN ELEVATOR AND TWO-STORY CARGO SHED of public railway tracks serve the terminals and industrial property of the District.

Approximately one-third of the water-borne commerce of Seattle Harbor is handled by the public terminal facilities, and they accommodate more than one-half of the trans-Pacific freights imported and exported.

The Port of Seattle Commission is a unique organization in that it does not lease or surrender to others the use of the terminals and ferries, but operates the properties with public employes. It is, in fact, a municipal business corporation, the stockholders being the whole people of the Port District. Goods trans-shipped between vessels and railway are received, checked, stored and forwarded by such employes at published tariff rates.

The Port municipality is superimposed upon the city and county, but wholly independent of either of them. It represents not only public ownership of port facilities, but complete public operation as well.

Police Ambulances Need No Frills

By C. G. Stadfield, M. D.

Chief Surgeon, Receiving Hospital, Los Angeles, Cal.

WITHIN the last few months the Los Angeles Police Department has received a number of inquiries about our new ambulance. This was rather widely heralded on account of its equipment, which includes electric heating apparatus, wash-basin, hot and cold water, etc. We have hesitated to reply in full to these inquiries because we did not wish to be unduly critical of a new design. Nevertheless, in our experience there may be some points which will be of value to other municipalities.

The understanding is that this communication is not a "knock" but a plain talk to other American cities. Let us remember that ours is a police ambulance, not the invalid's coach of some private ambulance company that has an hour or so to answer a call, and let us view our subject accordingly from the standpoint of the Police Department.

It can be readily seen that many features of elegance in an invalid's coach are an encumbrance in a police ambulance. For instance, take the electric heating apparatus. The ambulance is in the garage when the police alarm system or public telephone informs the receiving hospital that a person has been injured at 10th and Main Streets, one-and-a-half miles away. A "fast wagon" call is given the garage for 10th and Main. The ambulance shoots out of the garage at twenty miles an hour, with both bell and siren going, and takes all traffic at about thirty-five miles per hour. It arrives at 10th and Main Streets, one-and-a-half miles away, in about four minutes, receives the patient and is back at the hospital in five minutes, long before the heating coil could even become warm. The ambulance has been run 15,000 miles since March, 1918, and we have used the electric heaters just twice, merely to see if they would work. They worked all right, but they were too slow.

Now in reference to the wash-basin and the hot and cold water. The ambulance makes a fast call to a foundry or machine shop in the manufacturing district, or to a person who has had a leg ground off by a a street car. A tourniquet or other pressure bandage is applied, the patient is placed in the ambulance and the return run made to the hospital. We arrive at the hospital even before we can lower the basin from the wall and start the water. In the twelve months of service by this ambulance the basin was never used.

The thermos bottles were stolen the first day the ambulance was in service. We couldn't stop to investigate, nor could we even understand what use they were intended for or who got away with them.

Municipal Savings Thru Honest Weights

The Weights and Measures Department of Any Fair-sized City Can Save One-Half Million Dollars Annually for the Citizens

By Edward McGuff
Chief Inspector of Weights and Measures, Indianapolis, Ind.

A LARGE firm or corporation that deals with the public thru selling commodities has almost limitless chances to give short weight or measure. For example, a firm putting up large quantities of butter in 1-pound-net cartons, could, if there were no Municipal Weights and Measures Department, set the scale one ounce fast; or be negligent enough to have one ounce of butter on the pan of the scale thruout the weighings; or not have the scale in perfect condition. If these cartons marked 1 pound net but in reality 1 ounce short, are sold at 64 cents per pound, each customer purchasing a carton marked 1 pound is cheated out of 4 cents. In 999 cases in 1,000 the customer would never know it. Assume that in a city of 300,000 inhabitants there were 100,000 families each using 2 pounds per week, or a total of 200,000 pounds weekly. If each family is cheated out of 4 cents on 1 pound, 100,000 families would suffer a total yearly loss of $416,000 on this one commodity.

I headed this story with the claim that any fair-sized city can save for its citizens by a Weights and Measures Department one-half million dollars annually, and I think any fair-minded person after giving the matter brief consideration will grant that this can be done. I do not claim that the condition described always prevails with the knowledge of the firm or corporation, but these mistakes, whether they come from faulty scales, careless clerks, firms, corporations or what not, are always paid for by the citizens. In the early part of last year in Indianapolis, by our nearly perfect reweighing system, we found that most of the butter in the stores, which was packed in cartons marked 1 pound net, ready to hand out to the customer, was short weight.

We make an annual inspection of every store using weights or measures, and while we are testing the scales and measures, or at any other time, we reweigh a great many of the packages that are already put up or packed ready to hand to the consumer. Our state law demands that if the commodity is put up and sold without the customer's seeing it weighed, the net contents must be plainly marked on the package. This year so far there has been a wonderful improvement in butter weights. All firms whose names appeared on cartons last year were notified when short weight was detected, and I am glad to say that this trouble has practically ceased. This improvement was brought about by the educational work and not by arrests. If a Weights and Measures Department will show a dealer how to weigh correctly and how to keep his scales in good order, 80 per cent of the battle is won.

The fact that any member of the Weights and Measures Department of this city is liable to stop in a store at any time and reweigh packages whose net contents are marked on them, has a tendency to eliminate short weighing. Of the packages reweighed in stores thus far this year, we have found only one-half of one per cent short weight, which goes to show that the merchants and clerks are careful in their weighing and in keeping their scales in proper condition. If a clerk puts up a package and marks the weight, and upon reweighing we find it short weight, we arrest the clerk, if any arrest is made. So it behooves the clerk as well as the merchant to be careful.

To maintain the Weights and Measures Department of this city costs the taxpayers less than $8,000 annually. It should, therefore, be clear to any fair-minded mayor, city manager, city council, or county commissioner that to run a city or county without a competent, wide-awake Weights and Measures Department is misrepresenting the taxpayers rather than keeping the pre-election promises to represent them. Live officials in the different communities are bound to install such departments, as public sentiment will demand it.

Suggestive Methods of Instruction in Citizenship

"The civic conscience will not go to sleep if the eyes of the people are kept open"

By George D. Luetscher
Teacher of Community Civics, High School, Jamaica, N. Y.

THE great need of increasing the intelligence of our citizens has been recognized of late by educational authorities and has found its chief expression in well-planned courses of instruction for students in the grades and in the first year of the high school. It is the purpose of this article to present briefly several methods which the writer adapted to community civics classes composed of first-year students in the Jamaica High School, New York City, as a means of realizing this new educational aim.

The Use of Source Material

There are two potent reasons why the students of community civics must be introduced to the value of source material. In the first place, the civics textbooks fail to meet the demands of the recent tendency in civics instruction which places the emphasis upon the local community or the immediate civic environment of the child. Textbook writers do not desire to limit the use of their publications to any particular community, and hence local government is described in general terms which apply equally to all local communities. In the second place, every citizen needs training in the ability to discover the truth about any community service. The real nature of any such service, the question of its extension or curtailment, and the manner of rendering it, are often matters of debate; and, in the intelligent solution of these problems, citizenship action is frequently a very important factor. Naturally, the correct solution must be based not upon an appeal to prejudice or partisanship, but upon accurate knowledge. Students of the first year in a high school may be led to take an intense interest in their search for the truth. All that is needed is intelligent direction on the part of the teacher. The following is a concrete illustration of this claim.

The writer introduced the services of the Health Department of New York City to his classes. Mention was made of the fact that in the last twenty years the appropriations for this department have increased 220 per cent and that one of the main reasons for this increase was the establishment of the Bureau of Child Hygiene. One of the great problems of this Bureau is the reduction of infant mortality. Class discussions revealed clearly that the members were aware that infant mortality is very high and that they were acquainted with many community activities, both private and public, which aim to cope with this problem. However, they were totally unprepared for, in fact they challenged the accuracy of, the following quotation from a recent publication on social problems:

> "More than one-half of the children of the United States die before they reach the age of five."

The class at once directed its attention to the sources of information which might aid it in testing the accuracy of this statement. Various members supplied the following facts leading to probable sources: that the city of New York maintains a Health Department which issues an annual report; that the same department maintains Bureaus of Child Hygiene and Public Health Education; that New York State maintains a Health Department with similar bureaus and issues an annual report. The writer then added the further information that the Labor Department of the Federal Government has established a Children's Bureau which makes a specialty of investigating subjects relating to child welfare for the guidance of health authorities in states and cities and of the public in general.

Every one of these sources of information was used by the class. Several members examined the annual reports of the city and state health departments, while others wrote letters of inquiry to the state and city bureaus of Child Hygiene and Public Health Education and to the Children's

Bureau of the Federal Government. The examiners of annual reports made their contribution on the following day. They reported that approximately 10 per cent of the children died before they reached their first birthday and that the mortality during the succeeding four years was much lower than during the first, but they were unable to secure adequate figures for the five-year period. They were now primed for the replies to the letters of inquiry, and when the letter from the Federal Children's Bureau arrived they were rewarded with the exact information they were seeking. This letter gave sources of information and summarized the results of investigators as follows:

> "The figures (for 1910) show that of 1,000 infants born, 161 died before reaching the age of five."

The above procedure in the solution of a live social problem reveals several important points:

1. It makes evident the value of brief and pointed statements, such as quotations from books, pamphlets or departmental reports, which set forth in bold relief the problem to be solved.
2. It illustrates a method of procedure applicable to the solution of other problems, especially when the facts are in dispute and need to be verified by an appeal to the sources.
3. It shows the interplay of all units of government—local, state, and nation—in rendering community services.

The Value of Magazines in Civics Instruction

Another feature that needs to be emphasized in community civics instruction is the comparison of methods adopted in different cities in rendering general welfare services. Many cities thruout the United States and in other countries have engaged in various experiments in disposing of the city's waste, in guarding the health of their citizens, in improving the transit facilities for passengers and freight—in fact, in undertaking all the varied welfare services with which every city is entrusted. These experiments are of the greatest value. For example, steps taken by any city which result in a worth-while reduction in the consumption of water without cutting down legitimate needs, thru elimination of leaky faucets and pipes or thru the installation of a meter system, are of great value to every other city. The successful operation of reduction plants which are more than self-supporting, thus adding to the city's revenue thru the utilization of garbage in the form of by-products, affords some basis for intelligent judgment with reference to the recent proposal of the authorities of New York City to abandon reduction plants in favor of incineration plants. Any attempt to improve port conditions in our cities which involves not only the extension of port facilities and railroad terminals but their proper articulation, calls for a study of the important ports of the world before any solution is possible. The success of any city in a partial improvement of antiquated urban freight transit and storage systems has its lesson for New York City, where the cost of food shipment within the city more than doubles the prices of many articles of food.

These are but a few of the many live community problems which call for a comparison of methods adopted in different cities as a basis for intelligent community action on the part of officers and citizens; and there is no reason why this method of comparison should not be followed by classes in community civics provided an abundance of rich material within the comprehension of the students can be readily obtained. Many of our weekly and monthly magazines, even those of a general character, offer information of this kind, and several lessons on the use of guides to magazine material, found in all our libraries, will open up this storehouse of information. In fact, many of our leading magazines have offered special inducements for student subscriptions and are now being used in large numbers by teachers of English, history and economics. Instruction in community civics may be enriched in a similar manner, especially thru the use of magazines which deal specifically with municipal problems.

A Permanent Community Civics Exhibit

The third method aims to give still further concreteness to civics instruction by means of a permanent Community Civics Exhibit. We all remember the interest which the citizens of New York showed in the Budget Exhibit of 1910. Unfortunately, the city has not presented similar exhibits since that time. The writer has therefore

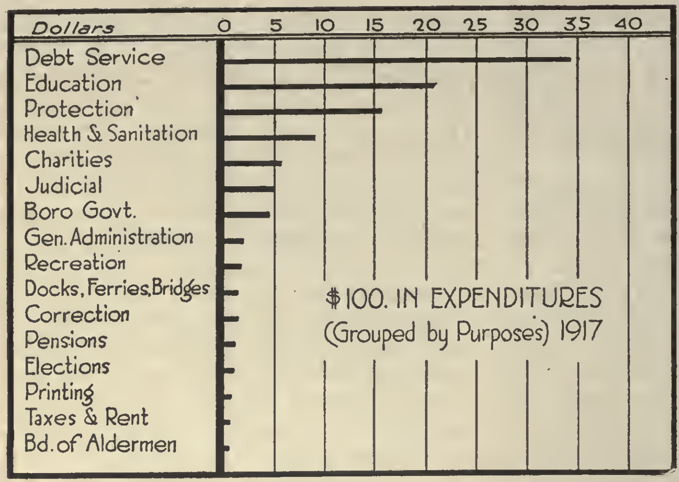


CHART I

started an exhibit of his own, of which the charts reproduced herewith form a part.

The first chart shows in graphic form the claims of each city service upon the expenditure of $100 of the revenue of New York City for the year 1917. It is a product of class competition. Every member was supplied, in mimeographic form, with figures from the Comptroller's report for 1917 on the relative expenditures of the various city departments. Only general directions were given by the writer on methods of graphic presentation. The results naturally varied greatly as to form and excellence. Several members took pains to produce works of art, the most effective charts being drawn on black cardboard with white ink for the lines.

This chart shows at a glance that in the expenditures of each $100 the debt service claims more than one-third, education more than one-fifth, protection of life and property one-sixth, health and sanitation one-twelfth. Discussion of the meaning of the debt service revealed the need of information showing what departments draw most heavily upon the debt service.

The second chart shows the interest paid on city bonds issued in the interests of the various city departments for the year 1917, the interest charges being by far the greatest item in the debt service. Here we note that several city services which draw most heavily on the city treasury, such as education and water-supply (which is included under health and sanitation in the first chart), also make the largest claims upon the debt service.

The third chart aims to give perspective to the financial operations of New York City and was constructed by the class from tables which the writer gleaned from Comptroller Prendergast's lecture to the stu-

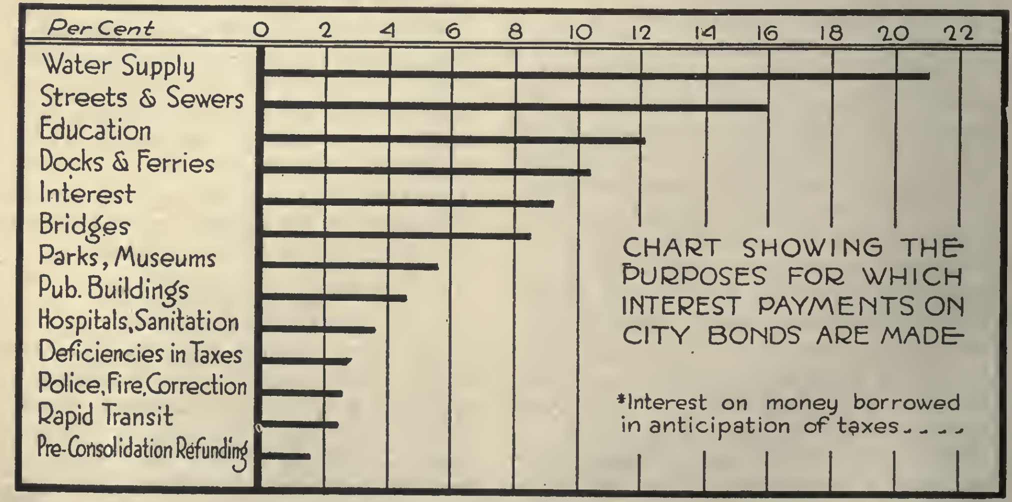


CHART II

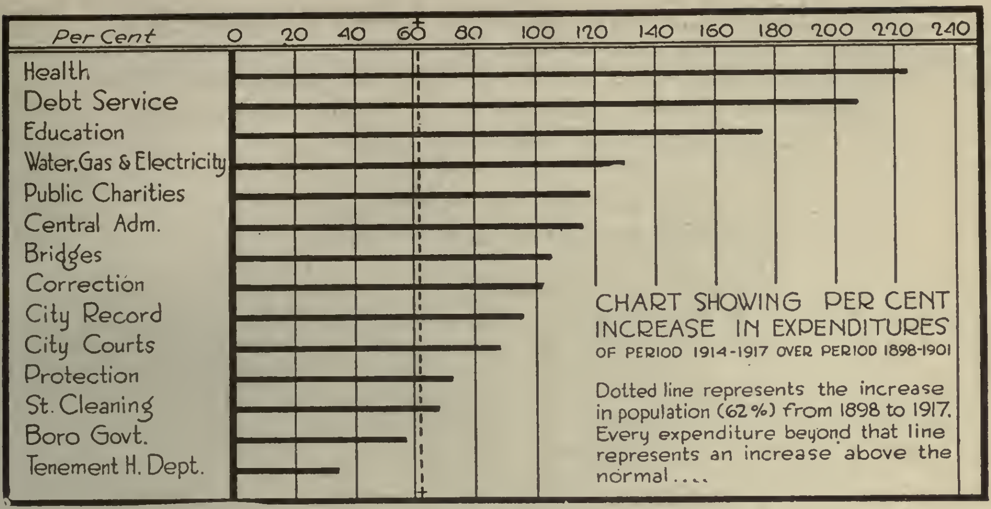


CHART SHOWING PER CENT INCREASE IN EXPENDITURES OF PERIOD 1914-1917 OVER PERIOD 1898-1901

Dotted line represents the increase in population (62%) from 1898 to 1917. Every expenditure beyond that line represents an increase above the normal....

CHART III

dents of The College of the City of New York on February 14, 1917. In this lecture the expenditures of New York City from 1898 (the date of consolidation) to 1917 are grouped into five periods of four years each. The chart utilizes only the first period (1898-1901) and the last period (1914-1917) and shows the increase of the last period over the first in expenditures by functions. The dotted line drawn perpendicularly across the chart at 62 per cent represents the increase in population between 1898 and 1917. Any increase in expenditure for any service up to that line may be considered as a normal increase, but any expenditure beyond that line should represent increased service to the city in the last period over the first.

This chart presents an excellent opportunity of summarizing the whole field of municipal activities in financial terms: What are the increased services rendered by the city health department in the last 20 years which warrant an increase of 160 per cent above the normal? What are the added services rendered in education, water, gas and electricity, public charities, bridges and correction which justify an increase above the normal of from 40 to 110 per cent? Are there any limits to the city's borrowing capacity, which has increased its indebtedness almost 150 per cent above the normal within the last twenty years?

Three-Fold Aim of the School

"The real tests of good citizenship . . . are right thinking, right feeling, and right action." These three aims, however, are not separate entities which are acquired independently of each other. Right feeling and right action are the results of right thinking, or intelligent citizenship. As has been well expressed by a recognized authority on municipal government: "The first essential of efficient administration is intelligent citizenship. . . . . For persistent and firmly grounded success it is necessary that a citizen shall know more than a few platitudes about public affairs. . . . Our direct appeal should be to the heads, not to the consciences, of citizens. The civic conscience will not go to sleep if the eyes of the people are kept open."

The growing boys and girls in our cities are, in many cases, brought up to look upon the mayor and council as a collection of incompetents and possible grafters. Fathers and mothers must take a greater interest in municipal affairs and obtain a true estimate of the personal worth of their representatives if this condition is to be remedied.

Selling Good City Government

Outlining the Development of a Definite Program of Constructive Publicity on Commission-Manager Government in Kalamazoo, Mich., During Its First Year of Operation

By Harry H. Freeman
City Manager, Kalamazoo, Mich.

IT must be obvious to students of municipal government that as the commission-manager plan goes into operation in more and more cities it will stand or fall just in proportion as the people of a city feel that it is what they really want. In other words, it is a selling proposition—a problem of creating a favorable public opinion. No matter how efficient its producing and administrative machinery, no large manufacturing concern, dispensing its product to the masses, could live six months without a consistent, carefully planned and executed "selling" campaign.

Many mistakes have been charged against the average American city, but none is more vital and baneful than that of leaving its citizenship ignorant and uninformed of the service it seeks to render. With some appreciation of this fact, the administration in Kalamazoo during this first year under the commission-manager plan has endeavored to develop a definite program of constructive publicity. To be sure, there is nothing very novel or new in any of its features, but the fact that we recognized the various items as parts of the whole program has meant that we have had the ultimate aim constantly before us, and each has been woven into the scheme to that end.

Loyalty of Employes

The first step in the program was to make sure that the city officials and employes understood the effort that was to be made, that they were all loyal to the city's interest and ready to work in a courteous and cooperative spirit. It requires no argument to show how easily the whole proposition could be thrown upon the rocks by lack of harmony or by the use of submarine tactics. We were to work together for the common good, and to advance the idea we decided to meet frequently in conference both during and out of business hours. Every city employe was to be a booster—the Commission, the Manager, the department heads, the policemen and firemen, and even the man working on the streets, were to tell the story of the new city government in a courteous, non-boastful manner. Incidentally, it is the most effective way of combating every community's chronic "knockers."

The Local Press

The obvious way to reach the public continually is, of course, thru the local press. We have courted widespread publicity for every official act or achievement. The reporters get their daily story from the City Hall and frequent feature write-ups for the Sunday editions. Our local paper has been very loyal to the new government, and extremely liberal in space and publicity of municipal matters. All Commission meetings are public, and the press records in detail each week's work.

While such publicity was essential and far-reaching, we felt the need of a frequent summary of our work and decided to get out a monthly paper. The *Kalamazoo Municipal Bulletin* appeared during February of this year, and beneath its headline the public was informed that it was to be "published occasionally for free distribution to the taxpayers and citizens of Kalamazoo, Michigan, being an attempt to inform the public of how commission-manager government is operating in Kalamazoo—what it has accomplished in the past, what it has under way at the present time, and what is contemplated for the future." The Bulletin is a four-page leaflet of 9 x 12-inch size and contains illustrations and short, snappy reviews of municipal work. Ten thousand copies are printed each time at a cost of approximately $50 per issue, and distribution to every home in the city costs about $25 more. This total cost of $75 per issue is partially offset by a revenue from single-column 2-inch ads, for which we charge $5 each. Not more than four such ads are used in any one issue. Many appreciative comments from citizens have convinced us that the small expense of the bulletin is more than justified.

The Complaint Bureau

Under the old aldermanic system of government you made your complaint, if at all, to your ward alderman. Perhaps it was attended to, and perhaps not, depending largely on how well you knew your representative or how well he knew how you stood on certain matters. To furnish a central and sure medium for complaints and suggestions (the latter a new appeal to the citizen), a bureau was established in the Manager's office, and widespread publicity given of its existence. A printed form is provided for each complaint or suggestion, and a regular procedure of handling them insures prompt and effective action. The citizen is advised by letter just what disposition has been made of the matter he "so kindly brought to our attention." To determine the efficacy of such work, consider the treatment of a few hundred such complaints and suggestions over a year's time by each system. For businesslike attention, promptness and genuine interest, you would undoubtedly favor the one now in use, and the average citizen the country over would be likely to agree with you.

The Municipal Exhibit

Water meters and gunmen's weapons, tax maps and charts of child welfare, fire alarm boxes and plugged sewers, miniature playgrounds and "phony" grocery store scales—everything, in fact, of city government and municipal business that could be shown by maps, charts, diagrams, models and display of actual material used was offered to the public at the big Municipal Exhibit during the week April 7 to 12. The Exhibit was one of the main features in the educational program. Afternoons and evenings during that week a constant stream of people—conservatively estimated at 12,000—passed in and out of the big hall, and many who entered as skeptics came

POLICE EQUIPMENT ON DISPLAY, WITH A WILLING OFFICIAL READY TO ANSWER QUESTIONS. MUNICIPAL EXHIBIT, KALAMAZOO, MICH.

PUBLIC UTILITIES SECTION, KALAMAZOO MUNICIPAL EXHIBIT, WHERE THE CITIZENS SAW FOR THEMSELVES HOW LEAKY PLUMBING MAKES THE WATER BILLS MOUNT

away with a clearer understanding and better appreciation of why and how his city government operated.

The cost of the Exhibit was small considering its size, duration and the results achieved. The expense was as follows:

Rent of auditorium	$150.00
Rent and erection of booths	257.00
Orchestra	29.00
Signs	56.45
Labor	7.77
Express, freight and cartage	20.23
Photographs	130.95
Miscellaneous supplies and expense	86.47
Total	$737.87

We did not convince everyone, of course, but easily 99 per cent of those from whom we solicited opinions stamped the Exhibit with their strong approval. It was something decidedly new to the average citizen and taxpayer to have the city employes explaining in genuine enthusiasm just how such and such a piece of apparatus worked, how much it cost, how much it saved over the old way of doing it, and like matters. A man who had just previous to the Exhibit entered a furious kick over his high water bill was seen to smile knowingly as he stood watching a water closet register its purposely made leak on a glass water meter. His attitude was entirely changed simply because he could then visualize the leak, whereas it had been quite difficult to accept the explanation at the Treasurer's office when he brought in his bill.

Hundreds of people found out for the first time that the tax money they paid in January went entirely to the state and the county instead of to the city as they had imagined, and immediately in their minds their city became less of an extravagant, wasteful corporation. Men—and women, too—were inclined to be less critical of the slight increase in taxes during the last few years as they studied a chart which asked them whether the war made increased costs for every business except the city government, and then proceeded to show them some of the increased prices that the city has had to pay during the last four years. The general effect of the exhibit could be gleaned from the remark of one man who claimed that he had been paying taxes for forty years but had been able to learn more from the Exhibit in two hours than he had in all that time previous.

The City's Annual Report

Nothing could be more forbidding and useless to the average citizen than the old type of annual report crammed from cover to cover with long tables of figures and terrifying statistics. When it came time this summer to present in summary form a picture of the first year of operation under the new form of government, we decided to make our report very different from anything of its kind ever seen by the citizen before. For the many pages of dry figures in which he could not possibly be interested, we substituted snappy and understandable paragraphs, profusely illustrated with pictures and catchy charts. The following examples of the many little items letting the citizen know that the high cost of everything made no exception for the city government will illustrate the way in which the matter was presented:

IS TALK CHEAP?

The telephone is quite indispensable in the conduct of the city's business. Even tho a close scrutiny had been made of the phones in service and a doubling up in several instances brought about, still up to the first of July the city was paying $55.25 a month, or $663.00 a year, for its telephone service. Then the same thing that made you mutter under your breath hit the city—and hit it hard—namely, the increase in phone rates. From $55.25 per month the new rating called for $184.53 per month, an increase per month for phone charges for the municipality of $128.28. This increase over a twelve-month period means an added cost of phone service of $1,551.36.

Another:

INCREASED COSTS IN THE POLICE DEPARTMENT

The following figures on the costs of various services and materials for the year 1915 as compared with 1918 show how the war has affected the cost of operation in the Police Department:

Articles	1915	1918	Increase Per Cent
Salaries	$33,867.93	$49,800.00	47
Fuel	462.09	800.00	73
Light	170.56	200.00	17
Office expenses	124.83	275.00	120

The average increase on these four items during the past four years was 64 per cent.

The report occupies about 30 pages, and 12,000 copies were printed, a copy being placed in every home in the city. The cost of the report was as follows:

Pictures, cuts, etc.	$ 60.00
Printing, 12,000 copies	260.00
Distribution	30.00
Total	$350.00

The nature and cost of the report just issued is worthy of contrast to the last annual report issued under the old form of government:

Old Report	*New Report*
213 pages	30 pages
150 copies	12,000 copies
No general distribution	Widespread distribution
No illustrations	26 illustrations
$359.97 total cost	$350.00 total cost

In putting out our first annual report we attempted to make it a record which would not only engage and instruct the citizen while reading it, but so impress him with its value that he would be proud to slip it into his bookcase for future reference.

The Responsibility of Public Officials

These are a few of the things we are doing to "sell" good government to the people of Kalamazoo. We are just making a start, but our interest and ideal are genuine. We have a sneaking suspicion that such propaganda is the real counter-irritant for dirty politics. Let us make up our mind that the mass of people in every city are more ready and eager to follow the intelligent leadership of sincere public servants than they are to trail with professional politicians. There has been too much lament in the past over the passive interest in, and even ignorance of, public affairs on the part of the people. Who, stopping to ponder the subject a few minutes, but will agree that some blame should attach to public officials who never attempt to interest the public in the why and wherefore of its own business?

FIRE PREVENTION DAY

IS A SPLENDID INSTITUTION. IT PROVIDES AN OCCASION FOR GETTING RID OF ACCUMULATED TRASH, BUT THE WISE CITIZENS AND PUBLIC OFFICIALS WILL NOT LET TRASH ACCUMULATE. THEY WILL

MAKE EVERY DAY

FIRE PREVENTION DAY

Civic Centers as War Memorials

Statement Prepared by the Bureau of Memorial Buildings of the War Camp Community Service

THE civic consciousness engendered in many communities thru the constant and active coöperation of all the citizens during the war has brought a more aggressive spirit to the support of municipal projects. Pride in the accomplishments of villages, towns and cities in the war is showing itself in an ever-increasing desire to provide more fully for the development of civic life. The desire is expressing itself in memorials of the war that will typify the spirit of service of all who lent their efforts. The idea of a mere shaft, an ornamented tombstone or something equally inanimate, so popular formerly, has lost its appeal to those who have caught the new vision of "carrying on" the work of bettering the world for which the war was fought. Consequently, the memorials adopted by many communities have taken the form, suggested by THE AMERICAN CITY in September, 1918, of community houses, auditoriums, hospitals, schools, libraries, parks, playgrounds and other worth-while projects.

But it has remained the privilege of a few communities to see further into the future and to plan an even nobler tribute than a building alone. They have seen the vision of a civic center, the heart and soul of a municipality, where the memorial to those who died and those who served may be expressed not only in the beautiful lines of a single marble building, but in a center of noble edifices, facing and enclosing a plaza or square in which trees and flowers add a touch of natural, living beauty to the memorial.

This idea of a civic center, a real center of the life of the community, has been most readily and quickly developed in those places which are considering the construction of new town and city halls and similar public buildings. Their leading men have seen the need of a place in which the citizens may assemble when matters of public interest are to be considered or municipal ceremonials are to take place, and where the demand for human companionship in the mass may be satisfied, even if they may merely sing together. It has become the duty of modern communities to make provision for the development of this growing phase of municipal life.

Some cities have felt it essential that the funds needed for such a memorial project should be secured by public subscriptions, to distinguish it from those supported privately or by taxation. Others have felt that a combination of private financing and public subscription would make the scheme easier of accomplishment, while still others have a preference for securing the money by means of bond issues and taxation. But whatever may be the method of raising funds, there can be no doubt that there is a peculiar fitness in dedicating as a memorial a feature which combines so well the ideals of service, beauty and permanency.

Memorial Civic Centers in Six Cities

The Bureau of Memorial Buildings of the War Camp Community Service, which recently announced that 280 communities had decided upon the

Courtesy of Robert C. Lafferty, Architect, New York City.

PROPOSED MEMORIAL CIVIC CENTER, PORTSMOUTH, VA.

building type of memorial as against the more conventional "monument" type, has gathered information also about memorial civic centers, feeling that advocacy of this larger form of memorial is a legitimate part of its service in regard to "community houses, auditoriums, recreation centers and other 'living' memorials." The following six examples are those which have taken most definite form in the memorial civic center field:

Portsmouth, Va.

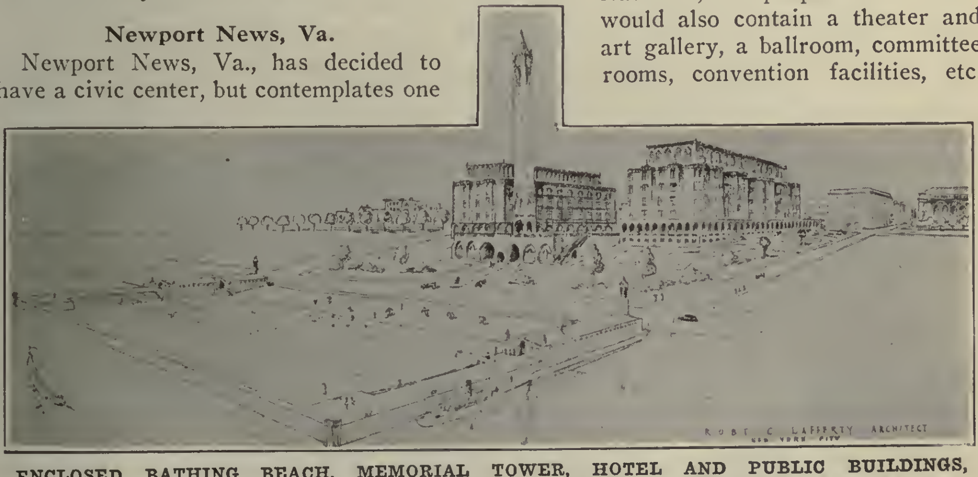
Portsmouth, Va., is actively contemplating such a grouping of buildings. Plans for a civic center conceived and executed by Robert C. Lafferty, of New York City, provide for colonial classic buildings to contain all city offices, courts, police department, fire department, jails and the numerous bureaus of a municipal government, for an open plaza where many thousands of persons may assemble, and for a memorial tower dominating the whole. This tower, or campanile, will contain a clock and chimes, a great pipe organ to be used for civic ceremonies and community choruses and, in an open space or sanctuary at its base, a huge bronze book bearing the names of all the citizens who entered the army, the navy or the marine corps, with notations of those who lost their lives in the service of their country. The book is to be so arranged that from year to year as the survivors of the war join those who have "gone west," impressive ceremonies may be held when their final records are placed in the community book of books.

Newport News, Va.

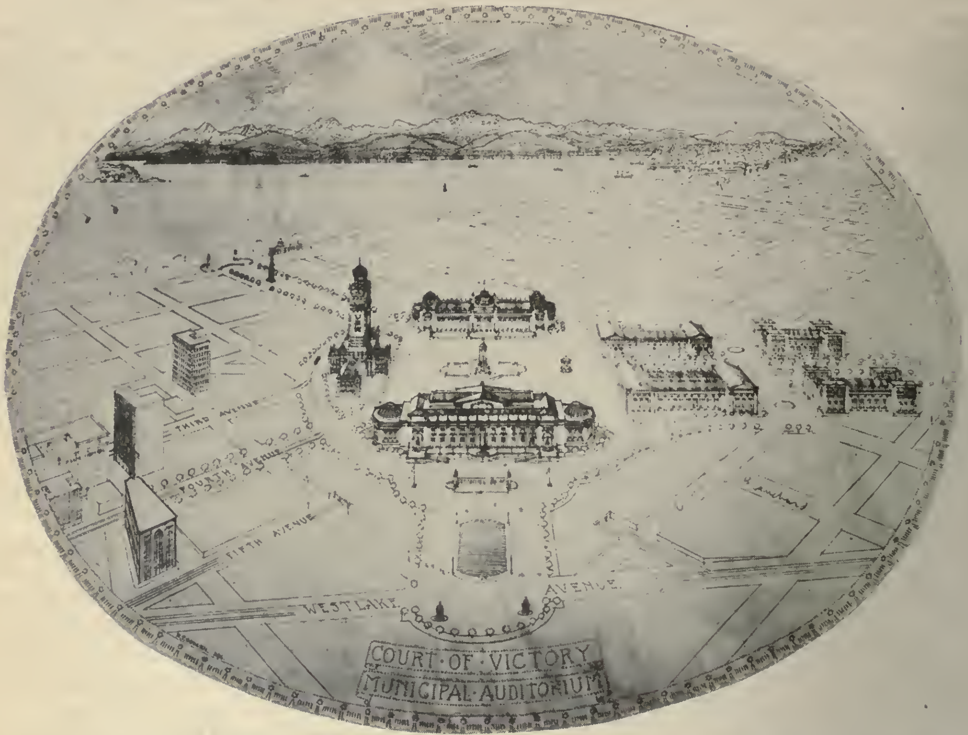
Newport News, Va., has decided to have a civic center, but contemplates one on a more extensive scale, combining the civic center with a convention center. In the undertaking as now designed the Old Dominion Land Company will have a large part. It is proposed in plans developed and submitted by Mr. Lafferty to group the city buildings on an elevation overlooking the James River where it widens into a great harbor as it approaches the sea, and to erect a commodious hotel to flank one side of the plaza. At the end of the plaza toward the river the memorial tower, with its clock and chimes, its organ and its bronze Book of Inspiration, is to stand. Over the plaza from the municipal buildings to the hotel are to stretch light artistic steel supports of Gothic design from which electric lights shall hang and over which a great covering of canvas may be drawn to make the plaza a place for mass meetings even in inclement weather. This covered public forum will have a capacity of 12,000 persons, while several times that number will hear the music, which will serve the surrounding parks. Below and beyond the plaza, encircling walls of masonry are to extend into the river and be connected by sluice gates. Here at high tide the water will be locked in and Newport News will have a bathing place with broad beach, high, clean water and full bathing equipment of houses and promenades as part of its civic center.

Seattle, Wash.

Seattle's first plan for a memorial was that of an auditorium which would seat at least 20,000 people and which would also contain a theater and art gallery, a ballroom, committee rooms, convention facilities, etc.



ENCLOSED BATHING BEACH, MEMORIAL TOWER, HOTEL AND PUBLIC BUILDINGS, CONSTITUTING PROPOSED MEMORIAL CIVIC CENTER AT NEWPORT NEWS, VA.



CIVIC CENTER, PLANNED AS MEMORIAL, FOR SEATTLE, WASH. THE PLANS INCLUDE AN AUDITORIUM, A CITY HALL, A FINE ARTS BUILDING AND A VICTORY COURT WITH A CENTRAL MONUMENT

The plan has since been enlarged to provide for a civic center, around which will be grouped the usual city buildings. There will be a magnificent Court of Victory, or Victory Square, having at its center a monument; but the chief memorial will be the immense auditorium. Other suggested buildings to be grouped eventually around the square or along the main axis of the court are a City Hall and a Fine Arts building.

Delegates from 300 civic, social, fraternal and other organizations were invited to the mass meeting at which the plan was decided upon. A group of four members of the Seattle Chapter of the American Institute of Architects are working on the designs for the building. Among the groups most enthusiastic for the plan are the labor interests and the musical groups. Seattle has long felt the need of a meeting place for conventions, for popular concerts, and other large gatherings. Representatives of King County, outside of Seattle, have suggested that the memorial should be a county as well as a city project.

A form of incorporation for the memorial auditorium association has been worked out which provides for the issue of two and a half million shares of capital stock of a par value of one dollar each. The association will organize under Washington state law as a non-profit-seeking corporation. All stock must be sold within a year's time.

It is planned to organize a compaign this fall which will last until the entire amount of money is raised. It is expected that it will take three years to erect the building after the funds are in sight.

Birmingham, Ala.

Birmingham, Ala., is on the way to secure as a war memorial a comprehensive civic center, which will, if accepted, require years for complete realization; $1,000,000 of a recent $4,500,000 bond issue is to be devoted to the erection of buildings in the civic center, which is shown by the accompanying sketch. This civic center is a part of the general plan originated by Warren & Knight, Birmingham architects, and Hartley Anderson, landscape designer.

The Memorial Tower, rising some 450 feet, occupies the center of the Court of Honor. Flanking the tower on the right and left are to be the Court House and the City Hall, connected behind the tower by a colonnade where space is to be provided for individual memorial tablets and for maps of battle-fields in colored mosaics.

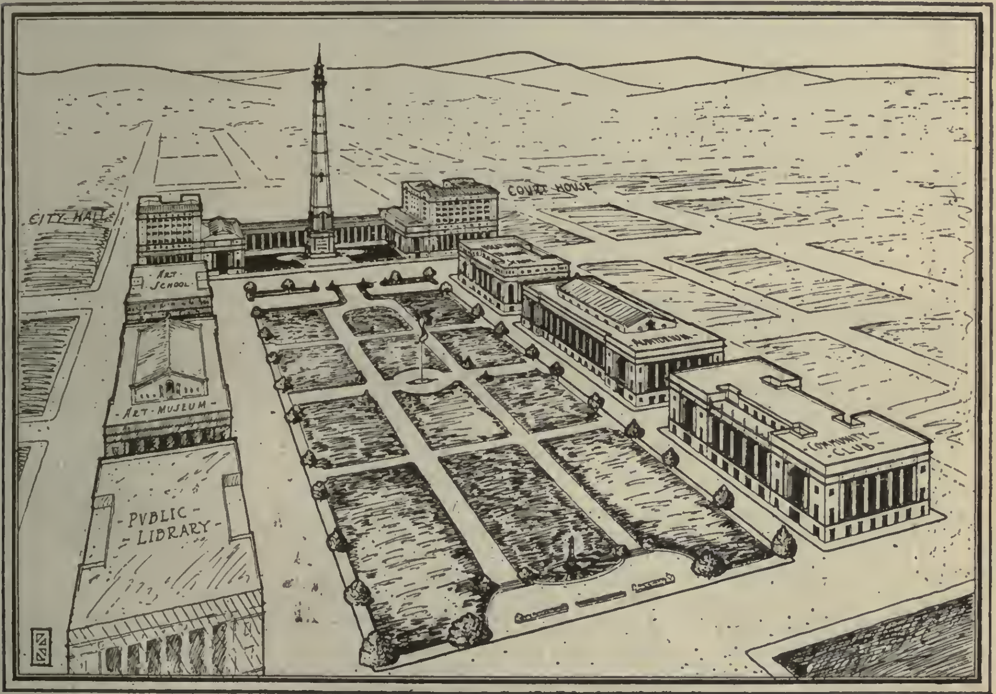
The proposed auditorium at the right would have a seating capacity of 9,000 and contain a smaller banquet hall to seat 1,500 people. The vocational training school, art school, art museum, and public library and the community club when completed will make a splendid grouping of buildings designed to serve the needs of the people.

Committees from the Civic Association and the Chamber of Commerce, the Library Board, and the Drama League are now working on plans for securing additional funds. Plans are also on foot for another bond issue of $1,000,000. From the funds thus realized, it is hoped to start work on at least two buildings of the group in the near future. To this sum a local committee proposes to add $250,000 for the auditorium, in October, by contributions thru a popular campaign for funds. The auditorium will be a war memorial for both the county and the city and will contain suitable memorial features.

Portland, Ore.

The most pretentious plan for a civic center has come from Portland, Ore., whose Mayor and Committee have conceived a memorial that will extend thru the whole city and will be connected with a highway that will reach thru the state.

The city is fortunate in having a series of park blocks extending from the river to the hills for a distance of nearly two miles, except for seven blocks now built upon. Considerable publicly owned property faces on these park blocks, such as three school buildings, the new Post Office, the U. S. Custom House and many churches and semi-public buildings. The Mayor's plan was to open the seven blocks built upon, which are in the heart of the city, and to dedicate the space as a "Liberty Mall." He requested the Oregon Chapter of



COURT OF HONOR, MEMORIAL CIVIC CENTER, BIRMINGHAM, ALA.

$1,000,000 of a recent $4,500,000 bond issue will be used to begin the buildings. Additional funds will probably be made available by bond issue and subscription the American Institute of Architects to appoint a special committee to recommend a treatment of this plan.

The report of this committee, completed in December, 1918, is one of the most interesting made by memorial commissions. The plan contemplates a monumental treatment of the park blocks, which will become an approach to a great shaft of Victory or some other suitable feature, such as a domed building or large statue which, because of its situation on a hill, will command the entire country for miles. There would also be a memorial park surrounding the monument. Thru the park would run the Victory Highway leading out of the city to the State Capitol. From this would lead a short road to the site proposed for a memorial hospital. The cost of the hospital and of the improvement of the Victory Highway and other features is expected to be met by both state and local funds, as the financial plan embraces contributions from both the city of Portland and the state of Oregon, as well as from the communities which would be benefited by the memorial hospital or the Victory Highway.

A central union station, suitable to the size and importance of Portland, is proposed for the other end of the Victory Mall, as well as a municipal dock and passenger landing connected with the train yards. The entrance to the Victory Mall would be marked by a gateway or memorial entrance. Pylons are suggested in preference to an arch, in order not to interfere with the vista of trees and the view of the shaft at the other end. At a turn in the Victory Mall not far from the proposed central station a monument of Democracy is proposed.

The Victory Mall leads straight on to the existing civic center, where it is proposed that an art museum be erected, and special treatment given to the Liberty Square. Public buildings along the Victory Mall are suggested, and recommendations made by which those near the Liberty Square can be brought into the treatment. A broad central driveway flanked by trees and with a smaller roadway on each side is suggested for the Victory Way.

Motor Vehicles Purchased Direct From Manufacturers Not Subject to Federal Tax

AN inquiry by a City Manager to Daniel D. Roper, Commissioner of Internal Revenue at Washington, recently brought forth the following response:

"Motor vehicles purchased by the city of ——— direct from the manufacturers not subject to the tax imposed by section 900 Revenue Act of 1918. However, motor vehicles sold to dealer who in turn sells to city are taxable sales. To be exempt must be made direct by manufacturer to city."

THE AMERICAN CITY, realizing the importance of this information to municipalities, sought confirmation from the Commissioner's office in the Treasury Department at Washington, and in reply received marked copies of the Revenue Act of 1919, and Regulation No. 47, relating to the excise taxes imposed by the manufacturers under Section 900 of the Revenue Act of 1918.

Sec. 900. That there shall be levied, assessed, collected, and paid upon the following articles sold or leased by the manufacturer, producer, or importer, a tax equivalent to the following percentages of the price for which so sold or leased:

(1) Automobile trucks and automobile wagons (including tires, inner tubes, parts, and accessories therefor, sold on or in connection therewith or with the sale thereof), 3 per centum;

(2) Other automobiles and motorcycles (including tires, inner tubes, parts and accessories therefor, sold on or in connection therewith or with the sale thereof), except tractors, 5 per centum;

(3) Tires, inner tubes, parts or accessories, for any of the articles enumerated in subdivision (1) or (2), sold to any person other than a manufacturer or producer of any of the articles enumerated in subdivision (1) or (2), 5 per centum.

The Regulation No. 47, relating to the section above, contains this sentence:

"Articles sold to a State or a political subdivision thereof by the manufacturer for use in carrying on its governmental operations are not subject to the tax. Articles sold by the manufacturer to a State, county, or municipal institution are also exempt from tax when paid for entirely out of public money."

FORWARD STEPS
REPORTED TO THE AMERICAN CITY
BY MUNICIPAL OFFICIALS & DEPARTMENT HEADS

For this department the editors will welcome short articles from city, town and county officials and heads of departments, on subjects of interest and practical value to others engaged in similar work. Photographs, plans, or other illustrative material, should accompany the articles whenever available.

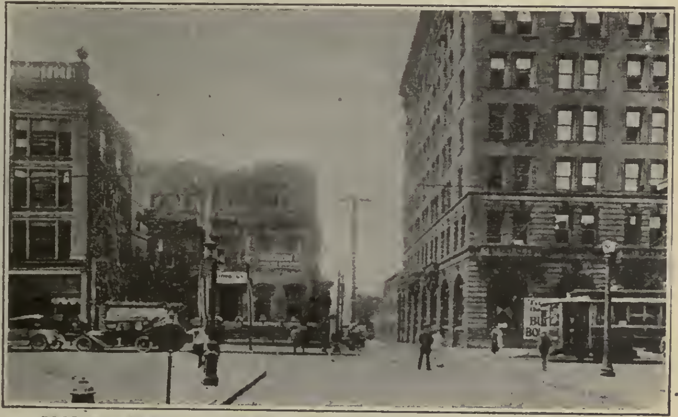
MAYORS

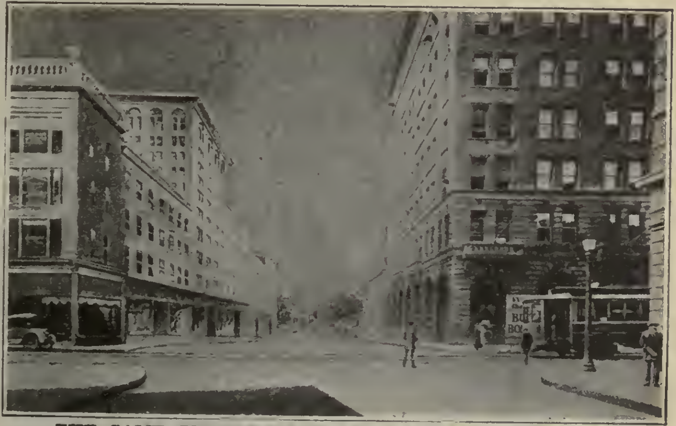
Convincing the Taxpayer About Special Assessments

TRENTON, N. J.—The city of Trenton has adopted a comprehensive plan for street widening and extension improvements which will entirely change its topographical appearance. The first link of the program which has just been approved and which will be put into effect at once is the widening of Montgomery Street from a narrow thorofare to an 80-foot boulevard. This street bisects the city in a northerly and southerly direction. The improvement of this block and the later widening of an adjacent block—for which the plans have already been prepared—will provide Trenton with a spacious thorofare north and south, as shown by the accompanying illustrations.

The street development plan which the city has formulated will relieve a pressing traffic congestion problem by creating new avenues of travel which, in their present shape, are but sparsely used. The project in its entirety is a stupendous undertaking, but it will transform the city and create traffic arteries which rapidly enlarging population and industrial expansion have made imperative.

In presenting this project to the people,


MONTGOMERY STREET, TRENTON, N. J., AS IT IS TO-DAY


THE SAME STREET AS IT WILL APPEAR WHEN THE IMPROVEMENT IS COMPLETED

the city officials took care to see that all who would be affected by the assessment proceedings had ample notice of the amount of the assessment likely to be levied against their property and that of others.

The accompanying letter was also sent to each property owner affected:

> Dear Sir:
>
> I am taking the liberty of writing you in reference to the proposed widening of Montgomery Street from East State Street to East Front Street, because of the vast importance of this improvement to the material welfare and progressive development of the city of Trenton.
>
> While you have been assessed for benefits as a property owner, whatever you will be asked to pay as your share of this improvement will be more than offset by the greatly increased value that will attach to your property by reason of the widening project. The widening of Montgomery Street will create a new and vital artery of travel for vehicular and foot traffic that, with absolute certainty, will result in an immediate increase of property values within the zone affected. In addition, it will divert traffic from congested streets, which will be the means of greatly bettering the municipal traffic problem.
>
> I need not assure you that you will be the gainer when this improvement is consummated. You will be the gainer not only as a property owner, but also as a public-spirited citizen of Trenton who prides himself in having a share in the progressive advancement of his home city.
>
> In view of the fact that the defeat of the Montgomery Street widening project now will probably mean the death of the project for all time, and for the sake of the extraordinary municipal importance of this improvement, I would respectfully urge you to give the proposition your valued endorsement.

That this publicity worked is evidenced by the fact that at the hearings on the project prior to its adoption by the commission only five of the affected property owners entered any protests.

FREDERICK W. DONNELLY,
Mayor.

PUBLIC WELFARE - AND SERVICE -

St. Louis' Modern Fire-proof Jail

St. Louis, Mo.—The St. Louis jail is a six-story fire-proof structure with steel interior framing, and walls of brick, faced with Bedford stone. Floors are of reinforced concrete and all structural columns and beams are concrete covered.

The basement of the building contains kitchen, laundry, and other service equipment. The warden's living quarters and executive offices occupy the first floor.

The center of the building contains stairways and elevators, with a rotunda space on each floor, communicating with the cells.

The cells occupy the wings on the second, third and fourth floors. They are of special tool-proof steel construction thruout, erected as units independently of the main structure. There are forty-eight cells on each floor, with accommodations for two prisoners in each cell, consisting of two steel bunks hinged to walls, toilet bowl, and wash basin. Four additional bath cells are provided on each floor. Cells are arranged back to back, separated by a corridor extending the full height, in which are placed all water pipes, drains, electric wiring, ventilating pipes, etc. A steel grill divides the space between the cell doors and the outer walls of the building, forming a corridor for prisoners next the cells, and an outer space for the guards.

Light, heat and power are supplied from the City Hall power plant located about 300 feet from the building. A tunnel for the transfer of prisoners connects the jail with the Mu-

MODERN FIRE-PROOF JAIL, ST. LOUIS, MO.

nicipal Courts Building about 100 feet away.

At present the fifth and sixth floors are without cells. It is proposed to provide funds for these additional cells as an item in the forthcoming municipal bond issue.

The original cost of the jail was $311,000. It is estimated that the additional cells will cost $85,000.

W. E. ROLFE,
Department of the President, Board of Public Service.

CITY ENGINEERS

Concrete Comfort Stations and Other Improvements

Lake Geneva, Wis.—Among the major improvements instituted in Lake Geneva this year have been the installation of comfort stations in Library and Willow Parks, which are located on the lake front. This work has also involved the construction of a sea-wall and terrace bank with a 6-foot concrete promenade at the top of the bank. In front of the sea-wall a clean wide bathing-beach has been prepared. A complete sewage disposal plant has been constructed for the city, and bids were received in September for a 40-foot-span concrete balustered bridge to be built over the lake outlet between the two parks. This bridge was designed by M. W. Torkelson, State Bridge Engineer, and the approximate cost will be about $9,000.

Willow and Library Parks are at the main entrances to the city, and front on the lakes. The comfort station in Library Park measures 20 x 24 feet by 8 feet high, and cost approximately $2,700. It has a four-hipped roof, which is painted green to harmonize with the surrounding foliage. The outside finish is elastic stucco with colored dash and cypress trimmings. There are two compartments with hard plaster inside finish and varnished yellow pine trimmings. The equipment consists of automatically operating flushing toilets, large mirrors and a tile floor. There are two glass-topped doors and proper screens, with concrete walks to the entrances.

The comfort station in Willow Park is smaller, and is at the entrance which leads to the city. The station is built of cement stone block 18 x 7½ feet by 8 feet high, and has a concrete floor and three closets. Great satisfaction has been expressed at the installation of these conveniences in the parks, and it is hoped that more such stations located in various parts of the city will be installed shortly in accordance with the spirit of the recent state law.

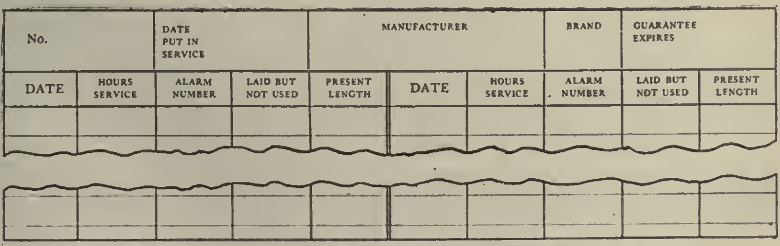
J. G. SKEELS,
City Engineer.

FIRE DEPARTMENTS

Recording the Service of Fire Hose

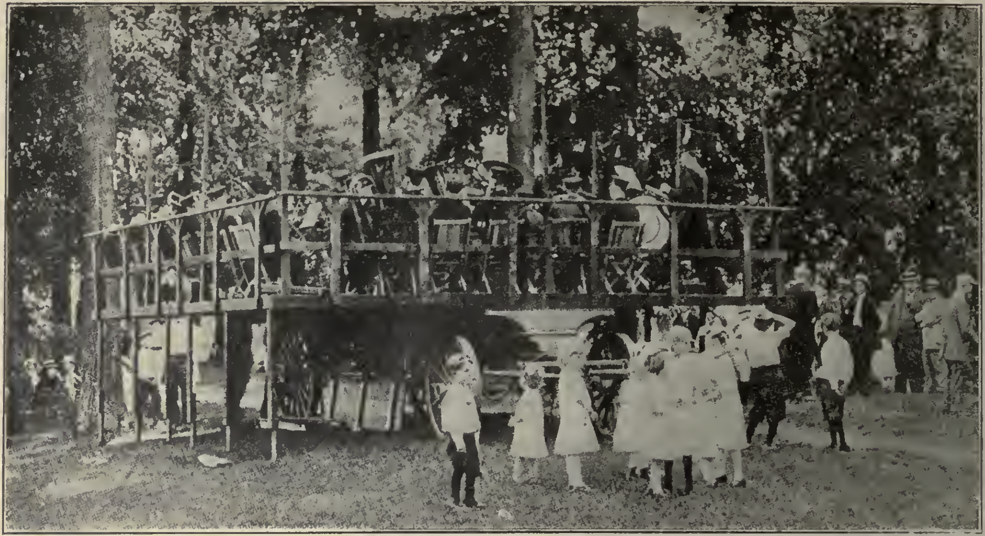
Evanston, Ill.—The card index system for keeping a record of fire hose used in the Evanston Fire Department was put into effect about two years ago and has proved of much value to the city. Before this system was instituted no record of service performed by each length of hose was available. Some of the department's hose was doing all the work and the rest was doing none, and simply from being stored was deteriorating and becoming useless.

Each length of hose is now numbered and measured, and any data concerning it are placed on the card reproduced below, which is kept in the Chief's office. A service slip is furnished to each fire company, so that when a length of hose is used for fire serv-



No.		DATE PUT IN SERVICE		MANUFACTURER			BRAND	GUARANTEE EXPIRES	
DATE	HOURS SERVICE	ALARM NUMBER	LAID BUT NOT USED	PRESENT LENGTH	DATE	HOURS SERVICE	ALARM NUMBER	LAID BUT NOT USED	PRESENT LENGTH

FORM ON WHICH SERVICE RECORD OF FIRE HOSE IS KEPT, EVANSTON, ILL.



FOLDING BAND-WAGON, DESIGNED AND BUILT BY PARK DEPARTMENT, FORT WAYNE, IND.

ice the captain may enter on the slip the number of lengths of hose and the number of each length, with the time that water flowed thru it, the alarm number, and, of course, the date of fire. If the hose is laid and then not used, this fact is also recorded.

The service slip is forwarded to the Chief's office with the regular fire reports, and all the data are transferred to the record cards on file. All hose in this department is changed every thirty days. A record of each length of hose is kept in a small book by the captain of each company. When hose is loaded to the hose box, each length is recorded by individual number in the book, which is retained by the captain. By referring to his record book the captain can always tell just what hose is in service, and can so arrange its use that the service will be equally distributed and that hose will not hang on the rack unused for weeks or months. With such data it is possible to make accurate comparisons of the relative merits of different brands of hose under local conditions.

The value of this system to fire departments in securing full value and service from fire hose is perfectly obvious, and the use of the system is spreading rapidly thruout the country as other departments learn of the saving effected thru an accurate knowledge of the service this blank is rendering.

A. N. HOFSTETTER,
Fire Marshal.

PARK DEPARTMENTS

Fort Wayne's Unique Band-Wagon

Fort Wayne, Ind.—Band-stands, of a character to fit the surroundings of our improved parks, are expensive to build, and the funds to do so in Fort Wayne were lacking, so we constructed a band-wagon, which when opened forms a substantial platform 20 feet square. It is wired for a string of lights on all four sides, connection at the parks being obtained by plugging into the park circuit. Adjustable stakes make it possible to get a perfect level. Beneath the wagon body a compartment is built for storing the folding chairs used upon the platform. The wagon when closed is easily drawn by a team or a Ford auto.

Its cost was $325, but it would cost somewhat more to duplicate it now. The investment has proved an exceedingly good and practical one, as the wagon is in great demand, not only as a band-stand, but also for use as a speaker's stand at numerous large gatherings held within the parks. On such occasions the Board furnishes and places the wagon without charge for a public use, but for private use charges $5.00.

DAVID N. FOSTER,
President, Department of Public Parks.

RECREATION - - DEPARTMENTS

Houston Holds Remarkable Play Festivals

Houston, Tex.—The Department of Recreation in Houston opened its doors February 1, having been included by the Mayor and Council in the Houston Foundation budget allowance for 1919. It was charged in part: "To encourage and promote wholesome recreation and play and to coöperate with and attempt to coördinate all agencies in the city providing the same."

Accordingly, by the efforts of this department, Houston, thru its school centers, celebrated a play week from March 24 to 29. All social workers in the city and many teachers and volunteers coöperated to make this week a happy success. Events were held in negro as well as white schools, and colored and white teachers and social workers served with equal devotion. Boys and girls, men and women, played informally together in their own neighborhood centers, and messengers told, at mass meetings, how good it is to play, and so to direct the play of children as to keep them "intelligently busy," and the play of adults as to make their leisure "intelligently happy." Word went about that May 15 had been set aside as a day when all white neighborhoods should come together in one big "people's play party in the public park"—Herman, and that May 9, at Baseball Park, the negroes of Houston should have a like festival.

At the Colored Festival—probably the first of its kind held in any city—the public schools were represented 100 per cent. Two thousand children participated, and the audience represented three thousand people. This event was remarkable for genuine play spirit and the high purpose of its leaders, which were apparent to the most casual observer.

For the Herman Park Festival every kindergarten, school, dancing school, every organization and fraternal order that provides recreation, was invited to help make up the program—a program as varied as the groups it represented, of great choruses, massed bands, dancing, games, athletics, and fun. It was intended that this merry-making should be "by *all* of the people, for *all* of the people," and should inaugurate an annual event. When the great day came, Houston threw off the conventions and cloaks of present-day differences and harked back to customs of a simpler, kindlier age when all village folk made merry together on the green. Regardless of race, creed, station or occupation, Houston was there—folks were folks, and all folks were happy folks. It was an open secret that team work did it.

Then came the questions: Will there be other days like these? Will there be others soon?

The answer is: five playgrounds for white children and two for negroes. These are now open daily under supervision. Other grounds will be included as rapidly as funds become available. Houston has had playgrounds spasmodically in the past. Some have been worth-while demonstrations which paved the way for the Department of Recreation. The hope of this department is to gradually bring about a complete system of municipal recreation in Houston.

CORINNE FONDE,
Director, Department of Recreation.

MAY-POLES AT HERMAN PARK PLAY FESTIVAL, HELD UNDER THE DEPARTMENT OF RECREATION, HOUSTON, TEX.

The New Water-Works System for Phoenix, Arizona

By C. M. Morgan

THE city of Phœnix, Ariz., capital of the state and center of one of the richest farming districts ever reclaimed in the Southwest, is to bring a new and adequate supply of soft water a distance of 33 miles from the substratum of the Verde River. The new system will cost, according to the estimates made, $1,300,000, that sum in bonds having recently been voted by a majority of 25 to 1.

Phœnix has a present estimated population of 35,000 people, and expects to grow to three times that size in the next ten years. The present water supply is scarcely adequate for the present needs of the city, and entirely inadequate in case of a large conflagration. The water has also an objectionable mineral content that makes it hard on mains and plumbing, and difficult for many persons to use for drinking.

The new supply will be a pure, soft water, with practically no mineral content, filtered thru the sands and gravels lying below the level of the river bed. It will be brought to the city by a gravity system, and delivered into the mains at an average pressure of 65 pounds. The ordinary pressure of the present pumping system is about 40 pounds, stepped up in case of fires to 65 to 70 pounds. The gravity system will entirely eliminate the necessity of pumps, and save the present cost of $30,000 per year for this item.

The elevation at the point of intake, or the infiltration system, is 1,379 feet above sea level, with the intake approximately 25 feet below the surface. No tunneling will be necessary, the excavation being made from the surface and filled in above the pipe after the work is completed.

From the intake to the reservoir site is a distance of about 120,000 feet, the reservoir being at an elevation of 1,277 feet. It will be built of reinforced concrete, about 50 per cent below ground. The first section to be built will have a capacity of 25,000,000 gallons, a supply sufficient for about six days' use at the present rate of consumption. The reservoir will be so constructed as to be capable of expansion by the addition of more units.

The water will be delivered to the city mains 45,000 feet from the reservoir, at an elevation of 1,085 feet and a pressure of 65 pounds. The pipe line will be 42 inches in diameter, with an estimated capacity of 15,000,000 gallons daily. This is the approximate amount of the present water right in the flow of the Verde River for the territory covered by the city of Phœnix. Annexations will add territory having additional water rights to this flow, and thus allow the capacity to be enlarged as the city growth continues. The capacity of the system as it is to be built, however, is more than ample for the domestic use of a city more than three times the present size of Phœnix.

Alternative bids are to be asked for the construction of the pipe line of wood stave pipe, riveted steel and reinforced concrete. The estimates, however, were made on a basis of wood stave pipe construction. Surveys for the exact location of the water line are now under way, and will be completed by the time the bonds are issued and sold.

The engineer's estimates are as follows:

25,000,000-gallon reinforced concrete reservoir	$ 250,000.00
42-inch wood stave pipe, laid	630,800.00
11 miles extra strength pipe, additional cost	58,000.00
42-inch concrete pipe, laid	180,000.00
Hauling:	
825 tons cement	8,250.00
5,125 tons wood pipe	25,625.00
Valves and gates	10,000.00
Air vents	3,000.00
Arroya crossings	30,000.00
Engineering, legal services and incidentals 10 per cent	119,567.50
	$1,315,242.50

The city that chlorinates its water-supply is providing itself with good insurance against a criminally high death rate from typhoid fever.

Hot-Mix Asphalt Pavements

Comprehensive Details Regarding This Type of Modern Pavement—Part I

By Francis P. Smith
Chemical Engineer, New York City

IN hot-mix asphalt pavements the mineral aggregate and the bituminous cementing material are first heated separately, and while hot are mixed together. They differ from the so-called penetration type of pavement (in which cold stone in place on the road is given a surface application of hot bituminous binder) by having a better-graded mineral aggregate and a far better and more uniform coating of bitumen on the mineral particles.

Bituminous pavements differ from each other chiefly in the size and kind of the mineral aggregate, the bituminous cement or binder being substantially the same in each case.

Depending upon the size of the mineral aggregate used, bituminous mixtures may be considered as bituminous mortars or bituminous concretes, differing from ordinary mortars and concretes in having a cementing material which is plastic and which may be classed as a semi-fluid or a semi-solid. For this reason greater care must be taken in the grading of the mineral aggregate. in order to insure the requisite amount of stability, than if a rigid cementing material were employed.

Asphalt Approaches the Ideal Surface

It is generally conceded that the ideal surface for mixed traffic is one which is slightly malleable (approaching sheet lead in this respect), as this will minimize wear and noise. A pavement which is too soft and mobile will be objectionable, as it will rut and displace easily and offer too great resistance to tractive effort. Too hard a pavement will be noisy, and, unless it is very tough, will wear away rapidly; if monolithic, it will be liable to more or less rapid disintegration thru expansion or contraction. If jointed to overcome this, continuity of surface and smoothness of riding are lessened and disintegration at the joints is liable to occur. Malleability precludes extreme rigidity, hence a malleable pavement will be low in bridging strength and will require a rigid foundation. The ideal pavement would, therefore, appear to be one in which the foundation and the wearing surface are separate and composed of materials differing very widely in their properties, and provision should be made for renewing the wearing surface when necessary without disturbing the foundation.

All bituminous pavements are to a certain extent malleable and yielding; thus minimizing the wear of the mineral particles and making them more acceptable to horse-drawn traffic. In summer these qualities are more noticeable than in winter, for at very low temperatures the asphaltic binder becomes practically rigid. Bituminous pavements, especially those with fine mineral aggregates, are smooth, non-productive of dust, almost noiseless, waterproof, non-absorbent and easy to clean. They are capable of sustaining very heavy traffic, and also last well under light traffic. They are therefore well adapted for busi-

DUMPING A HOT BITUMINOUS MIX, FAIRFAX COUNTY, VA.

ness and residence streets, and the facility with which they may be kept clean makes them especially desirable in tenement districts. They are easy to repair without disturbing the base and offer but slight resistance to traffic. When dry and clean they are not slippery, and their slipperiness in moist or drizzly weather is largely due to the presence of a thin film of mud caused by the collection of street detritus; this can be greatly reduced by washing or keeping them clean. For this reason they are less slippery in a heavy rain than in a drizzle. The size of the mineral aggregate determines the character of the surface, i. e., whether rough or smooth, and from the wide variety of aggregates it is almost always possible to select one type which will satisfactorily meet any given set of climatic and traffic conditions. Bituminous pavements, therefore, come nearer to being the universal and ideal type of pavement than any other which has yet been devised.

Foundations for Asphalt Pavements

The very desirable quality of flexibility possessed by bituminous pavements makes it necessary to provide a stable foundation. If the foundation is unstable and sinks after the pavement has been put down, the pavement will gradually sink with the foundation, thus forming a depression in which water will collect and eventually destroy the pavement. The wheels of vehicles passing over such depressions will drop into them, the force of the blow depending upon the weight of the load and its speed, and this will still further exaggerate the depression by forcing up a portion of the pavement immediately in front of it. It will also set up a vibration in the springs of the vehicle which will cause successive blows to be dealt to the pavement until the spring vibration returns to the normal. This action, especially in commercial vehicles where the springs are short and stiff, results sooner or later in wave formation, which is unpleasant to ride over and which, when it once sets in to any considerable extent, rapidly increases until it becomes necessary to resurface the street or road. The same effect will be produced on a rigid foundation when the bituminous pavement is lacking in stability because of a poorly graded mineral aggregate, too soft or too much bituminous cement, or a combination of these.

The character of the foundation required will depend upon the traffic, climate, character of subsoil and drainage conditions. The heavier the traffic, the stronger must the foundation be. In cold climates where the ground freezes to considerable depth in winter, the spring thaws produce a very unstable condition of the subsoil, and in such cases the foundation must be stronger than is required in climates where there is little or no frost. A well-drained, sandy soil is much less affected by these temperature changes than is a heavy, clayey soil. In all foundations drainage is by far the most important single consideration. With adequate drainage, a much thinner foundation can be laid than where it is absent or imperfect, and the cost of proper drainage is often far less than the added cost of an adequate foundation on imperfectly drained ground.

A number of different types of foundations have been successfully employed, such as old macadam or Telford; broken stone rolled dry or cemented together with some form of bituminous cement; old cobblestones, Belgian block or granite set pavements; old brick or asphalt block pavements; bituminous concrete; natural cement and Portland cement concrete.

Where the traffic is light, as on country roads which are not main arteries from or between large cities and in some residential streets, old macadam or Telford roads have proved to be suitable foundations for bituminous surface mixtures. In the opinion of the writer. Telford is preferable to macadam because the large stones composing its base have a partial slab effect and therefore resist more strongly any pressure tending to displace them or to force them into the subsoil. In some cases, notably the Thames Embankment in London, a macadam foundation covered with an asphalt pavement has successfully carried very heavy traffic, but the layer of stone has been built up during many years and is very thick and the drainage is nearly perfect. Under very severe conditions the use of macadam or Telford as a foundation for bituminous pavements is to be deprecated, and more failures than successes have resulted from it.

Many roads are classified as macadam which contain no base course of large stone and are in reality only dirt roads which have never been properly drained and on which fine stone has been dumped and consolidated by traffic. Before using any macadam road as a foundation, its history, and more particularly its condition in the spring of the year, should be investigated. A sufficient number of test holes should be put down to determine the character and depth of the stone and the provision made for proper under and side drainage. It will usually be necessary to rebuild the road in a number of places, and in most instances the crown must be reduced. Wherever possible this should be done by filling up the depressions and building up the shoulders. Traffic will compact a road far better than will a roller, and a road surface which has been scarified and rolled will not be as hard and firm as one which has been compacted by years of traffic.

Where depressions are to be filled or shoulders are to be raised, the roadbed should be cleaned and slightly loosened to insure proper bonding of the new stone, which should be of the same size as would be employed in building up the corresponding portion of a new macadam road. It should be thoroly wetted and rolled with a

LAYING A BITUMINOUS MACADAM ROAD, MIXING METHOD, NEAR CHATHAM, N. J.

10-ton road roller, with the addition of sufficient screenings to prevent vehicle wheels from causing displacement. Unless this work is thoroly and conscientiously done, the foundation will not be of uniform strength thruout, and settlements will occur where the new stone was put. If it is necessary to scarify the road surface, this should be done to the minimum possible depth, after which the surface should be built up exactly as if constructing a new macadam road, and rolled until the utmost compaction is obtained. Wherever possible, traffic should then be turned upon the road for a few months to develop any weak spots in it, and to secure still better compaction.

Old pavements of brick, granite, etc., should not be used as a base if it is first necessary to reset them. In their original condition they are satisfactory if the traffic is not too heavy. Relaid blocks, until bedded by traffic, are not rigid, and have a tendency to rock, and asphalt pavements laid on such foundations in New York City have rapidly disintegrated wherever they have been exposed to heavy traffic.

Bituminous concrete is sometimes employed as a foundation. One of the best types of it is made from run of the crusher stone from 2-inch down to dust, so graded and mixed with sufficient sand as to make a fairly dense and rigid mixture carrying about 6 per cent of asphalt cement. When this is kept clean and the wearing surface is laid upon it at once, no binder course is necessary. It has less bridging strength than Portland cement concrete, should be laid only on firm, well-drained subgrades, and is not suitable for very heavy traffic. It is usually laid from 4 to 6 inches thick. It has a number of advantages over Portland cement concrete. It is very slightly subject to expansion and contraction cracks, and the overlying bituminous wearing surface, if properly laid, adheres to it very strongly, increasing its resistance to displacement under traffic. It is also water-repellent, and underlying moisture will not be sucked up thru its pores and attack the bottom of the wearing surface. This is a frequent and serious cause of disintegration of bituminous pavements laid on Portland cement concrete foundations where, thru imperfect drainage or unavoidable conditions, the ground water level or layer of permanently water-saturated earth lies close to the top of the subgrade.

Portland cement concrete foundations vary from 4 to 9 inches in depth, according to conditions, and in every case before laying them the subsoil should be thoroly drained and compacted. In certain localities of the northwestern portion of the United States and Canada very heavy clay soils are found, which in winter frequently develop cracks 4 to 5 inches in width and heave very badly. In such cases cross trenches should be dug every 25 or 30 feet, filled with coarse broken stone and connected with longitudinal trenches at the side of the street, similarly filled and draining to catch-basins. Concrete should not be laid directly on such a soil. Sand or gravel should first be spread upon it to such a depth that when rolled it will form a layer 3 to 4 inches in thickness, and the concrete should be placed on this. Under rapid temperature changes cement concrete foundations are liable to crack. When the cracks are large, the overlying bituminous wearing surface frequently cracks in or near the same place. Where the foundation cracks are small, the wearing surface is usually not affected by them. Rich, dense concretes are more liable to crack than leaner mixtures, and the writer advocates for foundation work a monolithic structure composed of a rather lean mixture, not richer than 1:3:5.

Transverse expansion joints in the concrete are not altogether satisfactory, as cracks in the pavement are liable to occur over them, and if the joints are filled with a bituminous filler, cut off flush with the top of the concrete, this filler is frequently shoved up thru the top of the wearing surface. If the filler is cut off about 1 inch below the surface of the concrete, it will not be forced thru the pavement, but the joints at best create an area of concentrated stress in that portion of the pavement immediately overlying them, which tends to rupture it. In addition to a lean concrete, the obvious remedy is to thoroly drain the subgrade.

Choice of Materials for Wearing Surface

Having considered the questions of foundation and subgrade, we now pass to the wearing surface. This is composed of mineral aggregate and bituminous binder. The mineral aggregate constitutes from 80 to 90 per cent of the pavement, and takes prac-

MIXING AND SPREADING A BITUMINOUS CONCRETE ROAD, JAMAICA, N. Y.

tically all the wear resulting from traffic. It must therefore be selected with great care. It must be hard enough to carry the traffic; it must have clean grains or particles to insure that the bitumen will adhere to them, and these grains or particles must be graded from coarse to fine so as to make a pavement of the maximum density with the smallest sized voids obtainable and with sufficient adherent stability to resist displacement under the shoving action of traffic. The surface of the grains or particles must be of such a character that the bituminous cement will adhere satisfactorily to them. Earth, sand, gravel, broken stone or slag, and finally ground limestone or Portland cement, or combinations of them, are the materials used in the type of pavements under discussion.

Earth is used in a special type of pavement which has been developed within the last five years. It should be of such fineness that at least 50 per cent of it will pass a 200-mesh sieve, and it should contain from 15 to 70 per cent of clay, depending upon its character. This material requires a special kind of plant to handle it.

Sand should be clean-grained, hard and moderately sharp. The grains should be chiefly quartz and should have rough, pitted surfaces. Where necessary, the proper grading of the different-sized grains must be obtained by mixing several sands, or in certain cases by the addition of unweathered crusher screenings. When using the ordinary type of bituminous mixing plants the presence of clay is undesirable, either as a coating to the grains or when disseminated thru the mass. For medium or heavy traffic pavements, all particles retained on a 10-mesh screen should be discarded. For light traffic, 3 to 5 per cent of 8-mesh particles can be incorporated in the pavement with advantage, or broken stone of the sizes and in the amounts described under "Topeka mixture." Sands containing a large amount of flinty grains should be avoided, as bitumen does not adhere well to flint.

Gravel should be clean-grained, hard, and free from adhering clayey particles. It is lacking in stability owing to its roundness, and is usually considerably improved by passing it thru a crusher. Gravel with a rough, pitted surface is to be preferred, and gravel containing a large percentage of flinty particles is to be avoided. It is unsuitable for the construction of pavements carrying heavy traffic, and inferior in all respects to crushed stone.

Broken stone should be freshly crushed, preferably in cubical-shaped particles. The size and hardness required depend upon the traffic which the pavement is to carry. Dense, hard limestone will carry medium and light traffic satisfactorily. Where the traffic, even tho comparatively light in volume, is composed of heavy iron-tired units, a dense, hard trap is required. Trap is now commonly used in the manufacture of asphalt block, altho in the past a large number of asphalt blocks made from limestone gave excellent service under light traffic. Granite is not usually satisfactory, as it is too coarse and uneven in texture; much of it is friable, and it is liable to shatter in crushing. Mesh composition or grading of the various-sized particles is just as important as with sand. It is not suitable for use in pavements carrying very heavy traffic.

Slag.—Hard, dense basic slag is to be preferred. It should be stable when exposed to the weather and should not show any tendency to slack or disintegrate. It is suitable only for light traffic and should preferably be coated with a very fluid bitumen.

Filler.—This should be finely ground limestone or Portland cement, the latter being preferable for mixtures designed to carry extremely heavy traffic. For light traffic the writer prefers limestone dust, as it does not have such a marked drying effect. Whichever is used, it should be ground so that at least 65 per cent of it will pass a 200-mesh sieve. Pulverized clay also makes an excellent filler, but is difficult to handle owing to its tendency to ball and cake if it becomes the least bit damp.

Bituminous binder, or asphalt cement, as it is termed in the sheet asphalt industry, must possess such properties that it will firmly bind together the mineral particles and resist the disintegrating action of traffic and the elements. The necessary tests for determining whether or not it is possessed of these properties are fairly well standardized and are embodied in most standard specifications. The consistency of the bituminous binder varies somewhat with the type of mineral aggregate, but otherwise its general characteristics are about the same for all types of the pavements under discussion.

The plant used in the manufacture of paving mixture is a very important element in the success of the pavement. A uniformly good mixture cannot be turned out by an imperfect plant. The standard type of plant first developed in the sheet asphalt industry has for a long time been recognized as the best for the purpose. In it the sand or stone—or both—is heated in revolving driers and fed by means of elevators into a storage bin. The bituminous cement is heated in properly designed melting kettles.

Measured or weighed (preferably the latter) amounts of the various ingredients are then mixed together in a twin-shaft mixer of the pugmill type. This mixture should have a speed of from 65 to 85 revolutions per minute, and for ordinary work each batch should receive a full minute's mixing. Where the service conditions are very severe it may be necessary to increase the time allowed for mixing and also to raise the temperature at which the mixing is done, in order to insure a thoro coating of the surface of all particles with a firmly adherent film of bituminous cement. Great care must always be taken not to overheat either the mineral aggregate or the bituminous cement, and this will injure and harden the latter. Too low a heat will result in imperfect coating of the mineral particles. Certain asphalts are fluid at much lower temperature than others, and certain asphalts are very readily injured by overheating, while others are not.

Plants of the concrete mixer type, in which the heating and mixing are done in one revolving chamber, are not to be recommended. As usually arranged, they are inefficient mixers and are liable to burn the bituminous cement if the flame is permitted to come in contact with it. The only way to avoid this source of danger is to heat the bitumen and the mineral aggregate separately and not to heat them in any way during the mixing process.

In the type of plant which we have been considering, clay or clayey particles are objectionable because they either become partly baked on the grains of sand or pieces of stone, or form into lumps which do not detach themselves or break up under the action of the mixer blades. This prevents the bitumen from adhering to the grains or else results in coating the outside only of the clay balls. Under traffic these balls break up and the bitumen becomes detached from the coated grains, tending toward more or less rapid deterioration of the pavement.

In plants used for constructing pavements made of pulverized earth, the grains after heating are subjected to pulverization, which breaks up any clay balls which may have been formed and which cleans the sand grains or small stone particles. Owing to the large percentage of water which clayey earths are liable to contain (three to five times as much as ordinary sand), these plants must have a much larger drier than ordinary sheet asphalt plants and they must be provided with a pulverizing device. The extreme fineness of the mineral matter necessitates a completely enclosed mixer and measuring box and special dust-collecting devices.

Out of the raw materials which we have discussed, four distinct types of hot mix pavement are laid. They are as follows:

Sheet asphalt, in which the mineral aggregate contains no particles which would be retained on a ⅛-inch screen;

Topeka pavements, which usually consist of a standard sheet asphalt mixture to which has been added from 15 to 25 per cent of stone passing a ¼-inch screen and retained on a 10-mesh screen, and approximately 10 per cent of stone passing a ½-inch screen and retained on a ¼-inch screen;

Bituminous concrete pavements (Bitulithic, Warrenite, etc.) having a mineral aggregate consisting largely or wholly of stone of varying sizes from 1½ inches down;

Pulverized earth pavements (National pavement) having a mineral aggregate composed wholly of pulverized clayey earth of such fineness that at least 50 per cent of it will pass a 200-mesh sieve.

TYPICAL ANALYSES OF ASPHALT PAVEMENTS

	Sheet Asphalt				
	Heavy Traffic	Light Traffic	Topeka Mixture	Bituminous Concrete	Pulverized Earth Pavement
Bitumen......	11.0	10.5	8.5	7.0	17.5
Passing—					
200-mesh...	14.0	10.5	8.5	5.0	55.5
100-mesh...	14.0	10.0	6.0	4.0	12.0
80-mesh...	13.0	10.0	6.0	2.0	6.0
50-mesh...	19.0	14.0	6.0	5.0	5.0
40-mesh...	11.0	14.0	10.0	4.0	3.0
30-mesh...	10.0	13.0	10.0	4.0	1.0
20-mesh...	5.0	10.0	9.0	3.0	....
10-mesh...	3.0	8.0	6.0	5.0	....
8-mesh...	....	....	6.0	3.0	....
4-mesh...	....	....	14.0	7.0	....
2-mesh...	....	....	10.0	20.0	....
¾" mesh...	....	....	....	14.0	....
1" mesh...	....	....	....	12.0	....
1½" mesh...	....	....	....	5.0	....
Per cent...	100.0	100.0	100.0	100.0	100.0

This article will be concluded in the December issue of The American City

Army Food Sales by the City of Newark

By Charles P. Gillen

Mayor, Newark, N. J.

IT has been my principal object in inaugurating the municipal system of army food sales in Newark to stimulate competition among the wholesale food purveyors and their various outlets. It was quickly made plain that the sale of army food caused a reduction in prices. A scant competition was first noticed a few days after the announcement that the army food was on sale. This competition became stronger with the appearance of advertisements by various stores which offered food at prices aimed to meet part way the cut prices of the municipal markets. The regular store reductions have continued and there is every indication that they will bring down the cost of living to a more reasonable figure than has prevailed in several years. Some retail dealers refused to handle ham and bacon because of the municipal market prices, but they have been forced to re-enter the field and to sell at rates which they would not have attempted if the army food had not been offered to the public.

The municipal sales in Newark have awakened the public to the fact that the mania for profiteering is nearing a climax. If the wholesalers and retailers cannot open their eyes to the situation, the Government will have to make them do so. I predict that if food prices are increased to any perceptible extent after this year, the Government will be compelled to resume purchasing of food for general distribution along the lines of the present army food sales. This method may also be applied in the case of other necessities.

An interesting phase of the army sale system in Newark is the fact that it has attracted numerous offers from private concerns to sell foodstuffs and other essentials to municipalities. These offers were so attractive that if we had the facilities for establishing municipal stores I am sure we could cut the price of living approximately 20 to 30 per cent and at the same time leave a fair percentage of profit and an additional amount for a sinking fund.

MAYOR GILLEN OPENING ARMY FOOD SALES IN NEWARK

As an illustration of the fact that some producers are willing and decent enough to ask for only a fair profit, I cite the case of a large Philadelphia canning house. This firm sold to the city of Newark a car-load of canned soup. The soup was analyzed by experts and found to be fully as good as any of the best advertised brands on the market. We have sold this article of food at 7 cents per can, or about one-half of the retail price for other brands in local stores. This food was so popular that we immediately ordered a second car-load. It seems to me that any retail grocer should be satisfied with 30 per cent profit, and that this article which we purchased for 7 cents could easily be sold at 10 cents.

I have been told that overhead charges consume a great portion of the profits of the retailer as well as of the wholesaler and the jobber. This is undoubtedly true; nevertheless I contend that there is absolutely no doubt that the public is being gouged unmercifully, and that the army food sales came at the psychological moment to help stay the wave of unrest felt thruout the nation. Since the opening of the army sales in Newark there has been no advance over the high rates which prevailed at that time. The peak of the storm has apparently passed, and now there is hope that there will be some display of mental balance by our big merchants. Let us halt the food speculator in his rush after the dollar here and in foreign countries. The sooner he is halted the better it will be for the nation.

A National Song Hour for Armistice Day

By Mrs David Allen Campbell
Chairman of the Community Music Department, National Council of Women

AMERICA is asked to sing with one great voice at eleven o'clock on November 11 in memory of the signing of the armistice, our victorious army, and the fallen heroes. The National Council of Women, comprising thirty-one national organizations, and representing nine million women, makes this request. The song hour will be held at the opening of the Council's Biennial Meeting in St. Louis, Mo., on November 11 at eleven o'clock, and it is the hope of the Council that community singing of patriotic songs will be held at the same time in every city and hamlet thruout the country.

A nation-wide celebration of the first anniversary of the signing of the armistice by a national song hour will let the joyful feelings of the people find full expression in the inspiring words and ringing tones of our best loved music.

Among the songs suggested for this occasion are the Star Spangled Banner, the Battle Hymn of the Republic, Lest We Forget, Ring Out, Sweet Bells of Peace, Our Tribute, America, My Paradise, My Own United States, and Nearer My God to Thee.

There is no lack of other songs to fit the event, and because Americans are enthusiastically responding to community singing everywhere we expect to have November 11 widely celebrated in this manner.

A VIEW OF JERUSALEM LOOKING WEST FROM THE MOUNT OF OLIVES

Restoring Sanitation in Palestine

By H. Y. Carson

Formerly Captain and Sanitary Engineer, Red Cross Commission to Palestine

PERHAPS no crusade has been so fraught with the altruistic spirit of cleaning up the miserable environment of a miserable people as was the work of the American Red Cross Commission sent to Jerusalem in February, 1918, at the invitation of General Allenby. One of the first duties of the Engineering and Medical Unit, following the reclamation of the Holy Land by the British troops, was to surmount the troubles occasioned by improper housing and lack of sanitation. The great difficulty of obtaining ample supplies of pure water had been, perhaps, the primary cause of most of these troubles.

Curiously enough, the spread of Christianity in western Europe has been largely responsible for the disuse of many bathing and sanitary institutions established thruout the civilized world by the Roman Empire. The Manicheans, a sect of the early church, held beliefs which forbade them to attend to personal sanitation. The soul, they contended, was an emanation from God, but the body was the work of what they called the Daemon. The more, therefore, they persecuted the body—and they admitted that bathing strengthened it—the better chance they thought the soul had for a happy future state. The followers of Christianity to-day have truly reversed this attitude toward sanitary matters—that is, if we include among the fruits of Christianity the sanitary advances made by American and other Christian peoples—and we may now claim leadership in the doctrine that "cleanliness is next to godliness."

Early Hydraulic Engineering in Palestine

While at Jerusalem during 1918 I saw many interesting evidences of Hebrew and pagan Roman engineering dating back thousands of years, and one might easily trace the decline of healthful living conditions there from the beginning of Christian Rome. Nor had the Turk made any attempt to abolish filth, mosquitoes and disease among the unfortunate dwellers in the Holy Land.

History relates, in the Second Book of Chronicles, how Hezekiah saved the inhabitants of Jerusalem from the fearful alternatives of surrendering to the cruel Syrians or dying of thirst and hunger. He did this by constructing a water tunnel thru a portion of Mount Moriah from the "Virgin's Font" on the eastern slope of the Kedron to a reservoir known as the Pool of Siloam. Thus this wise old king made it possible to secure good water within the battle walls of the city, and at the same time to seal up by thick masonry the original outer entrance to the spring, which heretofore had been accessible to the invading or besieging forces of the Syrians.

An interesting inscription on the walls of this tunnel relates how marvelously it was constructed by Hezekiah's engineers. The inscription has been translated from the ancient Hebrew to read in part:

> "And thus was the matter of the boring . . . . the pick each toward his fellows . . . boring, the hewers struck, each to meet his fellow, pick against pick; then went the waters from the issue to the pool for two hundred and a thousand cubits."

PONTIUS PILATE'S OLD RESERVOIR, CAPACITY 6.000,000 GALLONS, NOW CLEANED OUT TO HOLD THE SURPLUS SUPPLY FOR JERUSALEM

It is difficult to understand how, without the use of high grade engineering instruments, this tunnel was ever constructed with its dozen or more sharp angular bends in 1,750 feet of length. The tunnel is run thru the solid limestone hill on an exact level, and, as related by the ancient inscription near the western entrance, the workmen met midway while working simultaneously from the two sides.

Solomon in his glory and wisdom must have anticipated the importance of sanitary engineering. Even to this day one can see huge impounding reservoirs bearing his name, some partially filled with water, truck gardens and rubbish, nestling in the vale midway between Bethlehem and Hebron. From this, and perhaps from other sources, Solomon supplied his wondrous temple in Mount Moriah with hundreds of thousands of gallons of water daily.

The actual and symbolic value of pure water is referred to over and over again in the scriptures. The term "living water" refers to the water obtained from flowing springs and wells. These wells have ever been regarded as valued prizes of war during strife among peoples of the Holy Land. The other water used widely thruout Palestine is impounded or stored in large cisterns which are hewn or quarried out of the solid stone. In most cases a large portion of stone for the buildings—there is very little wood in Palestine—is taken from the spot where a cistern is to be placed. Later this quarry is walled and cemented for holding the rain water that is conveyed to it. Cisterns so constructed for collecting rain water have been put into use by almost every house in Palestine. In Jerusalem alone, if all the cisterns were filled they would contain 360,000,000 gallons. But when recently inspected, most of these have been found to be in a very filthy condition. It is recalled that one large cistern had not been emptied and cleaned in nineteen years.

A WELL IN BEERSHEBA, CALLED THE "WELL OF ABRAHAM"

New Water Supplies in the Holy Land

Before General Allenby undertook to cross the sun-scorched desert into Palestine by the military railway from Egypt to Jerusalem he conceived the idea of pumping water from the "Sweet Water Canal," whose source is the Nile, and delivering an adequate supply for the five complete army divisions which made up his attacking force. This project called for an immense amount of material and labor in the setting up of complete pumping and filter plants. The 12-inch force main which crosses the Suez near Kantara parallels the military railway for the greater part of the course. The first stretch of piping is of 12-inch diameter; the second stretch is 10-inch; and the last piping is 8-inch.

In spite of the fact that the water was forced thru the many miles of pipe at a rate sufficient to give every man in the army an allotment of three to four gallons per day, the problem of conveying the water on the backs of pack animals or by motor truck, often under shell fire, to the ever-advancing front line proved extremely difficult at times. During several hard days of fighting near Gaza the British soldiers in many instances succeeded in maintaining life on an allotment of one and one-half pints per capita per day. Of course this water was used for making tea.

These waters of the Nile, however, served only the lower portion of Palestine. The supply for such cities as Jerusalem, Gaza, Beersheba, Hebron, Eskalon, Jaffa, Jericho, Nazareth, etc., is obtained from local sources—springs, wells, etc., as stated above, some of which yield an abundance of pure water, others a scanty supply. Under the surface can be located plenty of water in all the regions of the territory which lie within the ancient boundaries of Palestine, that is, from Beersheba to Dan and from the Mediterranean to the River Jordan. It seldom rains in Palestine during seven of the twelve months of the year. Altho the rainfall at Jerusalem is about 30 inches per annum, the geology of the country permits very little water to be retained on the surface of the ground. The surfaces are stony, and consist for the most part of porous limestone, which permits the water to disappear quickly. However, the water table is fairly close to the surface, as evidenced by the excellent shallow wells and springs that are found on the dried-up "wadys" among the barren hills.

In sixty-seven working days the Royal Engineers of Allenby's army also constructed the Pontius Pilate water-supply system. The springs sixteen miles south of Jerusalem, which are probably the same ones given by Caleb* to his daughter, are used as the best modern source for Jerusalem. The pools of Solomon, located three or four miles nearer Jerusalem, are now in actual use as impounding reservoirs capable of holding 80,000,000 gallons. Other springs surrounding Jerusalem can without serious difficulty be developed to yield by modern methods a wholesome supply of water in quantities undreamed of by the ancients. For the first time in history the people of Jerusalem are enabled to have their cisterns, whenever they go dry, replenished with pure, sparkling, living water. Before a cistern is filled, however, the house owner must secure from the Health Department (the first since Roman days) a certificate to prove by inspection that his cistern has been cleaned and screened against the breeding of mosquitoes. He is then provided with enough water from the nearest water main, thru a temporary 1-inch service connection, to entirely fill his cistern, regardless of its size, and during the war this was done without cost to the owner.

Abolishing Malaria—The Scourge of the Ages

One of the most serious facts in connection with the water supply of Palestine is that Anopheles mosquitoes breed therein. It is, perhaps, in preventing mosquito and other insect life in Jerusalem that the American Unit has been of the greatest service. Thousands of severe cases of eye disease and other fly-borne maladies have been treated by the Unit during its work in the land of Canaan. Mosquitoes have been accountable for more sickness in Palestine than has resulted from any other source. They breed, for the most part, in the unscreened cisterns, drains, etc., and carry from house to house the germs of malaria. This insidious, vitality-sapping disease has had a very debilitating effect upon some of the greatest nations of former times. The Phœnicians of Tyre and Sidon, and later the Greeks and Romans, owe much of their decline to the debilitating effect of malaria caused by the Anopheles mosquito, which was thru all the centuries until 1918 allowed to breed unmolested in these cisterns of Palestine.

Better housing, better water, better food, better government and good hospitals, should bring the inhabitants of Palestine once more to a state of healthy citizenship.

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* Joshua 15:19.

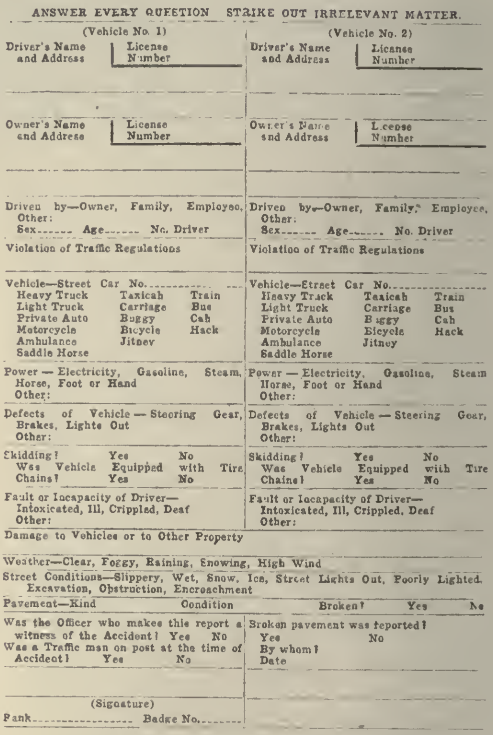
Indianapolis Adopts New Police Record System

By George V. Coffin

Former Chief of Police, Indianapolis, Ind.

MENTION was made in the April issue of THE AMERICAN CITY of some recent changes in the Police Department of Indianapolis. Chief among these was the establishment of a new record system, the main purposes of which are:

1. To affix individual responsibility for the various phases of police work.
2. To see that an adequate record is made of all business coming to the attention of the Police Department, that complaints are not disregarded, and that the action of the Department in dealing with them is recorded.
3. To have records prepared in such a manner that the data can be readily classified and analyzed by statistical process, to reflect:
   (a) The amount and character of work undertaken.
   (b) The results obtained, i. e., the disposition of each case.
4. To form the basis for intelligent supervision and review by administrative officers.



ANSWER EVERY QUESTION STRIKE OUT IRRELEVANT MATTER.

(Vehicle No. 1)	(Vehicle No. 2)
Driver's Name and Address / License Number	Driver's Name and Address / License Number
Owner's Name and Address / License Number	Owner's Name and Address / License Number
Driven by—Owner, Family, Employee, Other: Sex------ Age------ No. Driver	Driven by—Owner, Family, Employee, Other: Sex------ Age------ No. Driver
Violation of Traffic Regulations	Violation of Traffic Regulations
Vehicle—Street Car No.------------- Heavy Truck Taxicab Train Light Truck Carriage Bus Private Auto Buggy Cab Motorcycle Bicycle Hack Ambulance Jitney Saddle Horse	Vehicle—Street Car No.--------------- Heavy Truck Taxicab Train Light Truck Carriage Bus Private Auto Buggy Cab Motorcycle Bicycle Hack Ambulance Jitney Saddle Horse
Power — Electricity, Gasoline, Steam, Horse, Foot or Hand Other:	Power — Electricity, Gasoline, Steam Horse, Foot or Hand Other:
Defects of Vehicle — Steering Gear, Brakes, Lights Out Other:	Defects of Vehicle — Steering Gear, Brakes, Lights Out Other:
Skidding? Yes No Was Vehicle Equipped with Tire Chains? Yes No	Skidding? Yes No Was Vehicle Equipped with Tire Chains? Yes No
Fault or Incapacity of Driver— Intoxicated, Ill, Crippled, Deaf Other:	Fault or Incapacity of Driver— Intoxicated, Ill, Crippled, Deaf Other:

Damage to Vehicles or to Other Property

Weather—Clear, Foggy, Raining, Snowing, High Wind

Street Conditions—Slippery, Wet, Snow, Ice, Street Lights Out, Poorly Lighted, Excavation, Obstruction, Encroachment

Pavement—Kind Condition Broken? Yes No

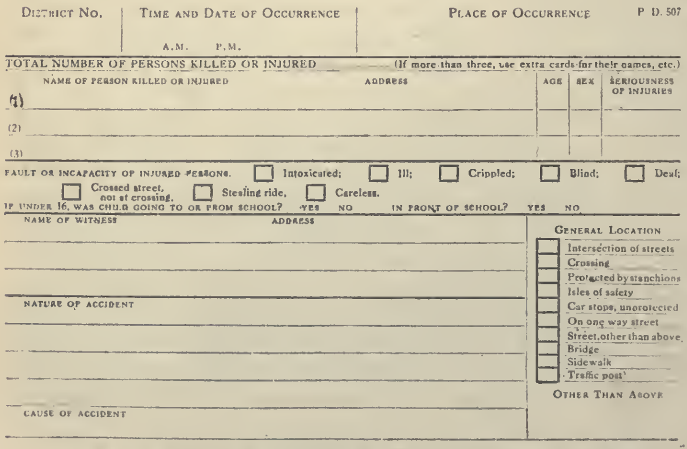
Was the Officer who makes this report a witness of the Accident? Yes No Was a Traffic man on post at the time of Accident? Yes No	Broken pavement was reported? Yes No By whom? Date
(Signature) Rank---------------- Badge No.-------	

REVERSE OF CARD SHOWN BELOW

Brief Description of Specific Records

1. *Complaint Book:*

All complaints made by citizens must be recorded in this book. A uniform method of recording the information is afforded. The entry is not complete until it shows what police action was taken in the case. Altho not all trivial complaints can be made the subject of police investigation, this record will at least fix the responsibility for discretion in such matters. There can be neither overlooking nor "canning" of complaints.



DISTRICT No. | TIME AND DATE OF OCCURRENCE A.M. P.M. | PLACE OF OCCURRENCE P. D. 507

TOTAL NUMBER OF PERSONS KILLED OR INJURED ------ (If more than three, use extra cards for their names, etc.)

	NAME OF PERSON KILLED OR INJURED	ADDRESS	AGE	SEX	SERIOUSNESS OF INJURIES
(1)					
(2)					
(3)					

FAULT OR INCAPACITY OF INJURED PERSONS. ☐ Intoxicated; ☐ Ill; ☐ Crippled; ☐ Blind; ☐ Deaf; ☐ Crossed street, not at crossing. ☐ Stealing ride, ☐ Careless.

IF UNDER 16, WAS CHILD GOING TO OR FROM SCHOOL? YES NO IN FRONT OF SCHOOL? YES NO

NAME OF WITNESS ADDRESS

NATURE OF ACCIDENT

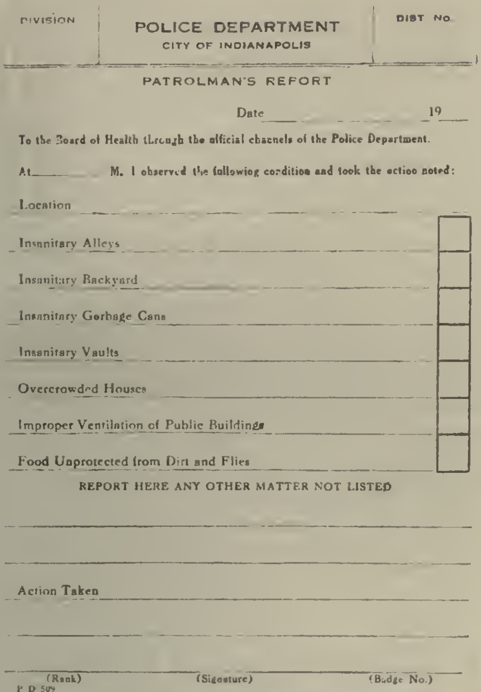
CAUSE OF ACCIDENT

GENERAL LOCATION
- ☐ Intersection of streets
- ☐ Crossing
- ☐ Protected by stanchions
- ☐ Isles of safety
- ☐ Car stops, unprotected
- ☐ On one way street
- ☐ Street, other than above
- ☐ Bridge
- ☐ Sidewalk
- ☐ Traffic post

OTHER THAN ABOVE

FACE OF CARD FOR RECORDING VEHICULAR ACCIDENTS

2. *Detectives' Complaint Book — Case Record:* Complaint book same as described above. Cases that are assigned for investigation in the detective bureau are important, and a complete departmental record of the history of



DIVISION | POLICE DEPARTMENT | DIST. NO.

CITY OF INDIANAPOLIS

PATROLMAN'S REPORT

Date ______ 19___

To the Board of Health through the official channels of the Police Department.

At______ M. I observed the following condition and took the action noted:

Location ______

Insanitary Alleys ☐

Insanitary Backyard ☐

Insanitary Garbage Cans ☐

Insanitary Vaults ☐

Overcrowded Houses ☐

Improper Ventilation of Public Buildings ☐

Food Unprotected from Dirt and Flies ☐

REPORT HERE ANY OTHER MATTER NOT LISTED

Action Taken ______

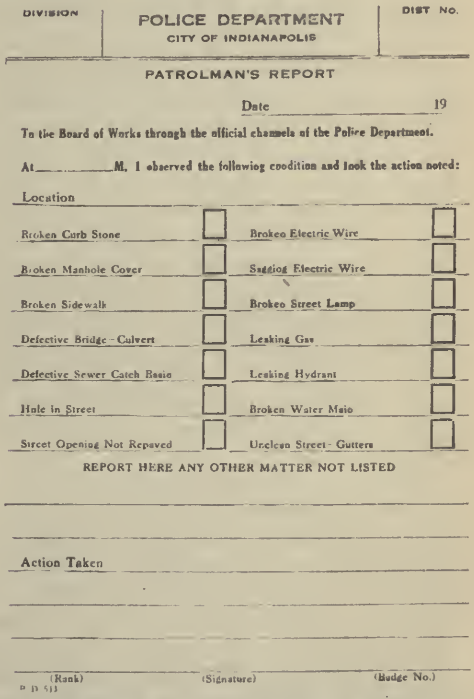
(Rank) (Signature) (Badge No.)

P D 509

BLANK FOR PATROLMAN'S REPORT TO BOARD OF HEALTH

the case is required. Provision has been made for filing the cases serially to insure against loss. Provision is made for adequate cross indexes that will allow immediate reference and ready classification according to kind of crime or location of occurrence of crime.

3. *Arrest Record:*
   A permanent bound book record of arrest is provided. There are suitable headings calling for information that will give an adequate pedigree of persons arrested and the bail transactions. Such a pedigree is valuable not only for an analysis of criminal offenders and offenses, but for purpose of identification as well.
4. *Card Record of Arrest:*
   A card record alphabetical index of persons arrested—a most essential thing—keeps check on the court progress of cases and is used for statistical purposes.
5. *Daily Morning Reports—Uniformed Force and Detective Bureau:*
   Administrative reports, designed to supply such information as is required by administrative officers to form the basis of adequate supervision, serve as a barometer indicating the conditions of criminality in the city, the amount of special aid required of the Police Department and the results obtained. These reports show a comparison thruout with conditions in previous periods.
6. *A Monthly Report* shows a *detailed* classification of crime complaints and serves the same general purpose as daily reports.
7. *Report on Suspected Places—Weekly:*
   This report provides a check on one of the most difficult phases of police work, and is essential for the current work of the police and for administrative review of work done by police in the control of vice. An index by premises shows a current-history record of the character of premises suspected of illegal operation.
8. *Patrolmen's Standard Report Forms:*
   These include various subjects not before enumerated.
   1. They are designed to contain only such information as is considered essential, and at the same time they require the reporting officer to include that essential minimum.
   2. They form the basis for judging the policeman's work.
   3. They facilitate coöperation with other city departments.
   4. They are the standard form for proper filing.



DIVISION | POLICE DEPARTMENT | DIST. NO.

CITY OF INDIANAPOLIS

PATROLMAN'S REPORT

Date ______ 19___

To the Board of Works through the official channels of the Police Department.

At______M. I observed the following condition and took the action noted:

Location ______

Broken Curb Stone	☐	Broken Electric Wire	☐
Broken Manhole Cover	☐	Sagging Electric Wire	☐
Broken Sidewalk	☐	Broken Street Lamp	☐
Defective Bridge - Culvert	☐	Leaking Gas	☐
Defective Sewer Catch Basin	☐	Leaking Hydrant	☐
Hole in Street	☐	Broken Water Main	☐
Street Opening Not Repaved	☐	Unclean Street - Gutters	☐

REPORT HERE ANY OTHER MATTER NOT LISTED

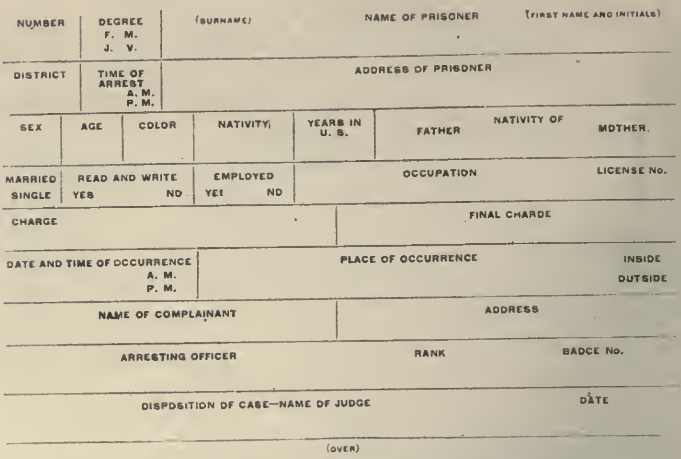
Action Taken ______

(Rank) (Signature) (Badge No.)

P D 513

PATROLMAN'S REPORT BLANK FOR RECORDING CONDITIONS FOR ATTENTION OF BOARD OF WORKS

9. *Card Record of Licensed Places:* This record gives police an opportunity to regulate properly.
10. *Card Record of Vehicular Accident Cases:* A card record requires information to be entered in accident cases that experience has shown are never fully and accurately recorded by reporting officers without some such guide. Only by keeping such a record is it possible to get at the causes and circumstances of street accidents. This record is necessary in studies of preventive measures.



NUMBER | DEGREE F. M. J. V. | (SURNAME) NAME OF PRISONER (FIRST NAME AND INITIALS)
DISTRICT | TIME OF ARREST A. M. P. M. | ADDRESS OF PRISONER
SEX | AGE | COLOR | NATIVITY | YEARS IN U. S. | NATIVITY OF FATHER MOTHER.
MARRIED SINGLE | READ AND WRITE YES NO | EMPLOYED YES NO | OCCUPATION LICENSE No.
CHARGE | FINAL CHARGE
DATE AND TIME OF OCCURRENCE A. M. P. M. | PLACE OF OCCURRENCE INSIDE OUTSIDE
NAME OF COMPLAINANT | ADDRESS
ARRESTING OFFICER RANK BADGE No.
DISPOSITION OF CASE—NAME OF JUDGE DATE
(OVER)

THIS CARD RECORD OF ARREST IS VALUABLE FOR STATISTICAL PURPOSES

EDITORIAL NOTE.—This new record system was installed with the coöperation of the Bureau of Governmental Research of the Indianapolis Chamber of Commerce.

Suggested General Highway Traffic Regulations

By the Highways Transport Committee of the U. S. Council of National Defense

SUGGESTED general highway traffic regulations, accompanied by an interpretative bulletin, are now being sent out by the tens of thousands as a part of the campaign inaugurated by the U. S. Council of National Defense thru its Highways Transport Committee to the end that the number of accidents on highways be decreased. Police records in cities thruout the country, especially in recent months, emphasize the vital need for concerted action looking to the safety of life and limb and intelligent study along the lines of simple and easily understood highway regulations.

The view of experts who have given the subject of traffic regulations extended study is that uniformity, especially as to the fundamentals in traffic regulation, is desirable if success in remedying traffic evils is to be attained. The Council of National Defense believes that, thru the general adoption by municipalities of the suggested regulations which it is distributing to the public, it is possible to reduce to a most gratifying extent the number of accidents growing out of the rapidly increasing number of motor vehicles on the highways.

Already, following the issuance of a preliminary statement to the effect that this nation-wide campaign was to be undertaken, gratifying response has been received from individuals, state officers, civic and other organizations, and comment in the public prints has been so extensive and of such commendatory character as to convince the Council of National Defense that the step which it is taking is a most pertinent one.

The key to the solution of the problem of how best to protect those traveling on the highways, especially in the cities and towns, both pedestrians and drivers of vehicles, is thru education of the public. Once the standardization of highway traffic regulations is brought about *thru coöperation by authorities* in the principal cities of the country, this education of the public as to the need for observation of rules laid down in these regulations, it is believed, may fairly quickly be brought about.

The regulations being distributed by the

Council thru its Highways Transport Committee stress the necessity for exercising caution at crossings, roadway intersections, and junctions, where most accidents occur. This caution implies extreme care on the part of drivers and constant watchfulness upon the part of both drivers and pedestrians.

The suggested regulations and the bulletin interpreting them are going to mayors, chiefs of police, commercial, Rotary and other clubs, insurance companies, governors, secretaries of state, highway commissioners, highway engineers, colleges, universities, motor associations, traffic associations, road associations, newspapers, trade journals, magazines, house organs, individuals, etc.

In the interest of the public safety the Highways Transport Committee asks the coöperation of public officers, publishers, civic and trade bodies and individuals in seeking to impress upon those in authority the very great importance of standardizing these suggested regulations, so far as is practicable in view of local geographical conditions.

How to Maintain Uniformity

The accompanying general regulations, if changed without the approval of the Council of National Defense thru its Highways Transport Committee, may not be utilized as officially approved by the Council. Should changes be deemed advisable, organizations, officials, and individuals will be invited to send in criticisms or suggestions, addressing them to the Highways Transport Committee of the Council of National Defense, Washington, D. C. Such suggested changes and criticisms will then be considered by the Highways Transport Committee and adopted or rejected.

Proposed General Highway Traffic Regulations

WITH DIRECTIONS FOR DRIVERS AND PEDESTRIANS

Compiled for Standardization and Adopted by
The Highways Transport Committee of
The Council of National Defense, U. S. A.
May 8, 1919
Issued by the

[Space left for name of Town, City or State]

....

DEFINITIONS

"Highway"—any street or road used as a public thorofare.

"Roadway"—that part of a highway for the use of vehicles.

"Sidewalk"—that part of a highway or park for the use of pedestrians.

"Crosswalk"—that part of a roadway, marked or understood, upon which pedestrians should cross.

"Safety Zone"—that part of a roadway from which vehicles, unless confined to rails, are excluded.

"Curb"—the edge of a roadway, marked or understood.

"Limit Lines"—boundaries of ranking or parking areas, safety or danger zones, crosswalks, etc.

"Vehicle"—any conveyance, including a horse. Hand- or foot-propelled conveyances and skaters are regarded as vehicles when on a roadway, but as pedestrians when on a sidewalk or crossing a roadway on a crosswalk.

"Street (Railway) Car"—any public service vehicle confined to rails on roadway.

"Horse"—any saddle or harness animal.

"Driver"—any person in control of a vehicle.

"One-Way Traffic"—traffic restricted to one direction.

"Ranking"—standing vehicles behind one another parallel with curb.

"Parking"—standing vehicles alongside one another at an angle to curb.

PEDESTRIANS MUST AVOID CARELESS WALKING AND ESPECIALLY OBSERVE THE FOLLOWING DIRECTIONS TO INSURE SAFETY AND AVOID UNNECESSARY INTERFERENCE WITH ONE ANOTHER AS WELL AS WITH VEHICLES:

1. Keep to the right on sidewalk, crosswalk, roadway and passageway (but in highway without sidewalk, keep to left, so as to have clear view of approaching traffic).
2. Observe traffic before stepping from curb and keep off roadway except when crossing.
3. Cross roadway at a right angle (never diagonally) and if reasonably possible on a crosswalk.
4. Watch for traffic officer's signal and heed traffic signs and limit lines.
5. Stand on sidewalk or within safety zone while waiting for a street car or bus.
6. Face and step towards front of street car when alighting.
7. When necessary to pass behind a street car, watch out for traffic.
8. On alighting from a street car or other vehicle, observe traffic before moving.
9. Enter and leave a car-stop safety zone at crosswalk only.
10. Do not stand in the middle of a sidewalk, but on one side and out of the way of other persons.
11. Do not loiter on a crosswalk or before a public entrance.
12. When sidewalks are narrow, use the one on the right.
13. Do not walk more than two abreast on a crosswalk or congested sidewalk, nor more than three abreast on any part of any highway.
14. Hand- or foot-propelled conveyances and skaters must observe regulations for VEHICLES when on roadway, but directions for PEDESTRIANS when on sidewalk or crossing on crosswalks.

The following Regulations for vehicles (including street cars in so far as their being on rails will permit) *shall be observed by the drivers thereof,* who shall *promptly comply* with all orders by voice, hand or whistle from the police as to starting, stopping, slowing, approaching or departing from any place, the manner of taking up or setting down passengers and the loading or unloading of anything.

Vehicular or pedestrian traffic may be diverted by the police to avoid congestion or to promote safety and convenience.

ARTICLE 1. RECKLESS DRIVING IS UNLAWFUL AND INCLUDES:

Section 1. Driving any vehicle when not legally qualified to do so, or when intoxicated, or when for any other reason not competent to drive properly.

Sec. 2. Driving any vehicle when it is not under practical control, *especially at crosswalks and roadway intersections or junctions.*

Sec. 3. Failing to exercise due care in crossing or entering the traffic of another roadway—*bearing in* *mind that it is obligatory not to interrupt the traffic of the more important thorofare unnecessarily.*

Sec. 4. Driving any vehicle across or into a safety zone.

Sec. 5. Exceeding a reasonable, considerate and safe speed rate under existing conditions or the speed rate established by law.

Sec. 6. Violating any of the following Regulations so as to cause danger or failing to take every reasonable precaution for safety or to obey any order of a traffic officer or any direction indicated by official traffic sign or limit line.

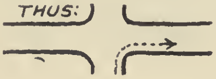
ARTICLE II. PASSING, TURNING, AND KEEPING NEAR CURB

Section 1. A vehicle passing or being passed by another shall not occupy more than its fair share of the roadway.

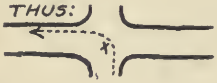
Sec. 2. A vehicle meeting another shall pass to the right.

Sec. 3. A vehicle overtaking another shall pass to the left, but must not interfere with traffic from the opposite direction, nor pull over to the right before entirely clear of the overtaken vehicle; *but in overtaking a street car, pass to the right if clearway permits.*

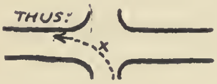
Sec. 4. A vehicle turning into a roadway to the right shall keep close to the right-hand curb,



Sec. 5. A vehicle turning into a roadway to the left shall pass around the central point of intersection of the two roadways,



except when directed by the traffic officer to pass in front of the central point of intersection,



and except when its turning radius will not permit passing around the central point of intersection without backing, *provided the vehicle slows down or stops and signals effectively.*

Sec. 6. A vehicle shall keep as near as practicable to the right-hand curb—*the slower the speed the nearer the curb.*

Sec. 7. A vehicle cruising for fares shall proceed fast enough not to impede following traffic.

Sec. 8. A vehicle on a roadway divided longitudinally by a parkway, walk, sunkenway, viaduct, safety zone, or cab stand, shall keep to the right of such division.

Sec. 9. A vehicle passing around a circle, oval, or other form of centralized obstruction, shall keep to the right of such obstruction.

ARTICLE III. STOPPING, RANKING OR PARKING, WAITING, OBSTRUCTING TRAFFIC, BACKING AND FOLLOWING

Section 1. A vehicle shall stop near the right-hand curb only, except on a one-way traffic roadway, where it may stop at either curb if the roadway is wide enough for three vehicles abreast. *This rule shall not apply to a designated ranking or parking space.*

Sec. 2. A vehicle shall not stop on a crosswalk nor within a roadway intersection except in an emergency.

Sec. 3. A street car shall not stop within five (5) feet of a street car ahead.

Sec. 4. A vehicle shall neither rank nor park so as to prevent the free passage of other vehicles in both directions at the same time; nor in one direction on a "one-way traffic" roadway; nor with any part of it or of its load extending beyond limit lines; nor within ten (10) feet of a fire hydrant.

Sec. 5. A vehicle waiting in front of an entrance to a building or a transportation station shall promptly give place to an arriving vehicle.

Sec. 6. A vehicle, when another vehicle is waiting to take its place, shall not remain in front of the entrance to a building or transportation station, except while expeditiously loading or unloading, and, if horse-drawn and with four wheels, the horse shall stand parallel with the curb, faced in the direction of traffic.

Sec. 7. A vehicle shall not occupy a roadway so as to obstruct traffic.

Sec. 8. A vehicle shall not back to make a turn if doing so will obstruct traffic, but shall go to a place with clearway enough for the purpose.

Sec. 9. A vehicle shall not follow another too closely for safety.

ARTICLE IV. OVERTAKING STREET CARS

(Where No Car-Stop Safety Zone or Platform Is Provided)

A vehicle overtaking a street car, stopped to take up or set down passengers, shall stop or pass very slowly, carefully and considerately, not approaching said car nearer than eight (8) feet in any direction.

ARTICLE V. RIGHT OF WAY

Section 1. A vehicle shall facilitate the right of way of Police Department and Emergency Repair vehicles of Public Service Corporations and Ambulances when in performance of duty, *but this shall not relieve such vehicles from consequences of carelessness.*

Sec. 2. A vehicle, on the approach of fire apparatus, shall move out of its way or stop, so as not to interfere with its passage.

Sec. 3. A vehicle in front of a street car, upon signal, shall immediately get off the track.

ARTICLE VI. SIGNALS

Section 1. Drivers, to prevent accidents, must observe traffic, exercise caution and signal by hand or by some other effective method before slowing, stopping or backing; and before turning, *especially to the left,* must indicate direction of the turn by the signal.

Sec. 2. Drivers, when approaching or entering a curve or highway intersection or junction or coming to the top of a hill, *if roadway is obscured,* must use sound signal effectively and go slow.

Sec. 3. Drivers, when crossing a crosswalk, must go slow, take care, and signal when necessary to insure safety.

Sec. 4. Police whistle signals indicate by—

One Blast—that approaching traffic shall stop behind crosswalks;
Two Blasts—that halted traffic shall proceed;
Three or More Blasts—approach of fire apparatus or other danger.

Sec. 5. Vehicles must be equipped with lights and sound signals as prescribed by law, but sound signals shall not be used except for necessary traffic warning. *A moderate speed will reduce need for noisy signals.*

ARTICLE VII. RESTRICTIONS IN REGARD TO VEHICLES

Section 1. A vehicle shall not be used when it is so constructed, enclosed, equipped or loaded as to be dangerous, to scatter its contents, retard traffic, or prevent the driver from having a view sufficient for safety; or when it is so loaded with iron or other material as to create loud noises while in transit, or when it is loaded with any material extending beyond its rear without being provided with a red flag by day and a red light at night on the rear end of the load.

Sec. 2. A vehicle, unless confined to rails, shall not tow more than one other vehicle, and no tow connection shall be more than sixteen feet in length, without authorization by law or official permit.

Sec. 3. A motor vehicle left standing without driver in charge shall not be in such a condition as to prevent its being rolled out of the way in case of emergency, but it shall have its motor stopped and effectively secured against being started, its emergency brake set, and, if on a hill, its front wheels turned in the direction of the curb.

Sec. 4. A vehicle intended for commercial purposes shall not be driven by anyone less than sixteen years of age.

Sec. 5. No one shall ride upon or hold on to the rear of a vehicle without the driver's consent.

Sec. 6. Coasting is prohibited where dangerous.

Sec. 7. Opening a motor muffler cut-out on a highway within a city or village, or within 500 feet of a dwelling, school, church or hospital, is prohibited.

Sec. 8. Dense smoke from motors is prohibited.

ARTICLE VIII. CONTROL, TREATMENT AND CONDITION OF HORSES

Section 1. A horse shall not be unbridled nor left unattended in a highway or unenclosed area without being safely fastened, unless harnessed to a vehicle with wheels so secured as to prevent the horse from moving faster than a walk.

Sec. 2. No one shall ride, drive or lead a horse on a slippery pavement, unless the horse is properly shod to prevent falling; over-load, over-drive, over-ride, ill-treat or unnecessarily whip any horse; crack or so use a whip as to excite any other one's horse, or so as to annoy, interfere with or endanger any person; or use a horse unless fit for its work, free from lameness or sores likely to cause pain, and without any vice or disease likely to cause accident, injury or infection.

Sec. 3. A led or ridden horse should be approached slowly and with extra care and consideration, particularly by motor vehicles.

How Regulations Should Be Used Locally

The regulations should be printed in four-page folders, 4 by 6 inches. Sufficient quantities should be kept always at hand at all police stations to be had on application, and every driver before receiving a license should be required to pass an examination as to these regulations, and to carry a copy of same with him at all times when operating a car.

Each policeman should not only have a supply of the regulations in his pocket to be given to infractors, but he should mark with a cross the section which happens to be violated.

Provision should be made for distribution of copies of the regulations to all school children, and the children should be required by their teachers to study the same in view of the fact that their value, properly utilized, is perhaps 95 per cent for education and 5 per cent for enforcement. The police work necessary is in inverse proportion to the education of the public.

It can be set down as a traffic axiom that familiarity with the intelligent use of properly printed general highway traffic regulations is the key to effective and economical traffic management. There is no substitute. It is easy to control a trained army, but next to impossible to regulate a mob.

The regulations, printed on large placards about 14 by 20 inches, should be required to be displayed in prominent places, in all public garages, stables, schools, station houses, and other available public buildings.

On the Calendar of Conventions

October 8-10.—Atchison, Kans.
League of Kansas Municipalities. Annual convention. Secretary, Albert A. Long, University of Kansas, Lawrence, Kans.

October 15.—Boston, Mass.
Massachusetts Chamber of Commerce. Annual meeting. Secretary, Edward G. Stacy, 6 Beacon Street, Boston, Mass.

October 20-22.—Winnipeg, Man.
National Educational Conference of Canada. First conference. Address, Professor W. F. Osborne, University of Manitoba, Winnipeg, Man.

October 20-24.—New York City.
American Prison Association. Annual Prison Congress. General Secretary, Joseph P. Byers, 3510 Lancaster Avenue, Philadelphia, Pa.

October 20-25.—Riverside, Cal.
League of California Municipalities. Annual convention. Executive Secretary, W. J. Locke, Pacific Building, San Francisco, Cal.

October 27-29.—Indianapolis, Ind.
National Association of Commercial Organization Secretaries. Annual convention. Secretary, Willis Evans, Association of Commerce, Peoria, Ill.

October 27-30.—New Orleans, La.
American Public Health Association. Annual meeting. Secretary, A. W. Hedrich, 169 Massachusetts Avenue, Boston, Mass.

October 28-29.—Edmonton, Alta.
Union of Alberta Municipalities. Annual convention. Secretary, J. D. Saunders, Camrose, Alta.

October 29-31.—Philadelphia, Pa.
American Civic Association. Annual convention. Secretary, E. E. Marshall, Union Trust Building, Washington, D. C.

October 29-31.—Indianapolis, Ind.
City Managers' Association. Annual convention. Executive Secretary, Harrison G. Otis, Tribune Building, New York City.

November 10-13.—Charleston, S. C.
Atlantic Deeper Waterways Association. Annual convention. Secretary, W. H. Schoff, Crozer Building, Philadelphia, Pa.

November 11-14.—New Orleans, La.
American Society of Municipal Improvements. Annual convention. Secretary, Charles Carroll Brown, 304 East Walnut Street, Bloomington, Ill.

November 15-17.—Boston, Mass.
Association of Urban Universities. Annual convention. Secretary, Frederick B. Robinson, College of the City of New York, New York City.

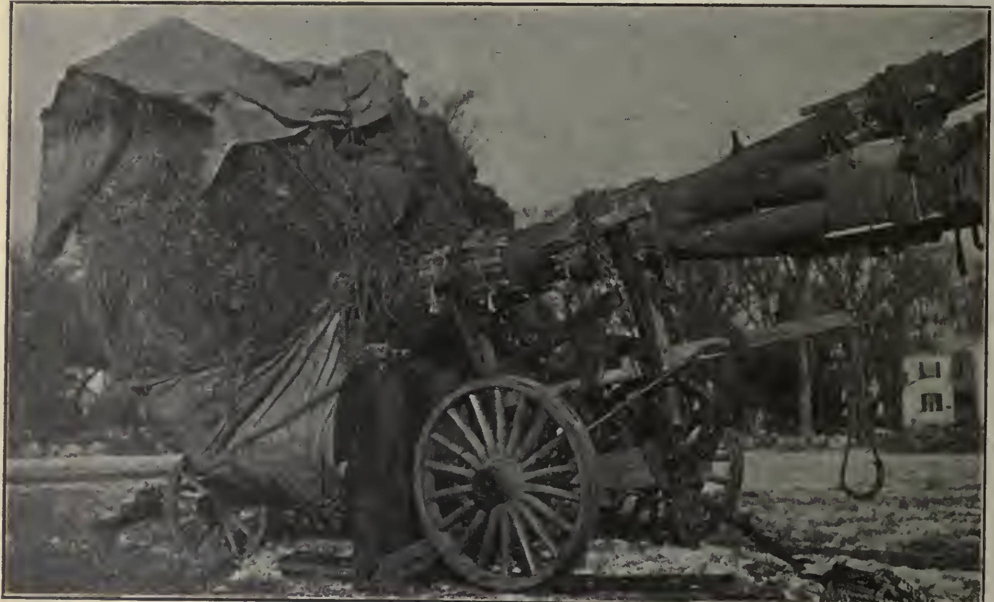
December 26-30.—Cleveland, Ohio.
National Municipal League. Annual convention. Secretary, Clinton Rogers Woodruff, North American Building, Philadelphia, Pa.

Transplanting Full-grown Elms

What Harvard College Did for Its Yard Any City Can Do for Its Parks

By Alfred MacDonald

THIRTY years ago, the magnificent elms in the Yard of Harvard College excited the admiration of everyone who visited the College, and the Harvard Yard was known all over the world for its beautiful trees. We are told that the elms made such a canopy that there was not an unshaded spot in the "Old Yard." In 1915, however, but few of the original trees remained. The death of the old trees was not due to any one cause, but to a number of conditions, some of which were undoubtedly unavoidable.



ONE OF THE LARGE ELMS MOUNTED READY TO BE TRANSPORTED TO CAMBRIDGE, MASS.

Enemies of the Elms

Probably the worst enemy has been insects. The gypsy moth was a serious pest in Cambridge for thirty years. The elm leaf beetle was also prevalent, and photographs of the Yard made about fifteen years ago show the leaves of most of the trees skeletonized by this pest. This condition was repeated for several successive years. Other leaf-feeding insects, such as the canker worm and browntail moth, contributed their share to the decline of the old trees.

The leopard moth appeared in the Yard about 1910. This borer attacks vigorous trees as readily as those in a sickly condition, and its effect is to weaken any tree on which it feeds. The elm bark beetle, which feeds on sickly trees, was undoubtedly the specific cause of the death of many. This insect often follows the leopard moth, and is invariably fatal to an elm when it attacks the trunk of a tree. Trees will often die within a week when attacked. The leopard moth slowly weakens a tree so that it quickly succumbs to the attack of the bark beetle. The American elm in this vicinity is attacked by more insects than any other species.

The subway from Boston to Cambridge, built about five years ago, partially encircles the Yard, and probably has had a tendency to lower the water-table. Old trees are particularly susceptible to any change in their ability to get moisture, and this subway, acting as a drain, may have hastened their decline. The soil conditions in the Yard are rather poor. Test borings show very shallow soil with a deep gravel sub-soil. Such a sub-soil has a very poor capacity for retaining moisture. It would be difficult to find a place where conditions seem to be so adverse to the growth of elms as those which existed in the Harvard Yard five years ago.

Selecting the Trees

In 1915 it was decided to plant large elms to replace those which had been lost. This was made possible thru the interest and generosity of Arthur H. Lea, of Philadelphia, who agreed to finance the work. Mr. Lea's desire was to have the largest and most perfect elms which could be moved planted in the Yard.

The work was carried on under the direction of Professor R. T. Fisher, of the Harvard Forest School, according to plans made by Professor H. V. Hubbard, of the Harvard School of Landscape Architecture. The writer supervised the actual work of digging and planting, and arranged for the purchase of trees and other details.

Practically the entire summer of 1915 was spent searching for elms of from 12 to 24 inches diameter and 30 to 60 feet tall which could be moved to the Yard. The difficulty of finding such trees was great. Elms in and about Cambridge had all suffered more or less from insects, and practically all were infested with the leopard moth. This condition necessitated our going some distance from Cambridge to secure specimens free from insects. To be suitable for such transplanting, a tree must be isolated in order that it may be of the proper symmetry and that the roots may be free from those of other trees. It was desirable also to select trees growing in soil which would cling to the roots when the trees were lifted.

It was difficult to find trees of the proper symmetry which might be pruned without mutilating, for it is always necessary to cut back a tree somewhat to compensate for injury to the roots in moving. The trees had to be transported under trolley wires, and it was therefore necessary to select those which, when carried in a horizontal position with the branches tied in, would clear a standard trolley wire 19 feet from the ground. The trees were moved thru crowded streets during the day, but traffic was seldom obstructed.

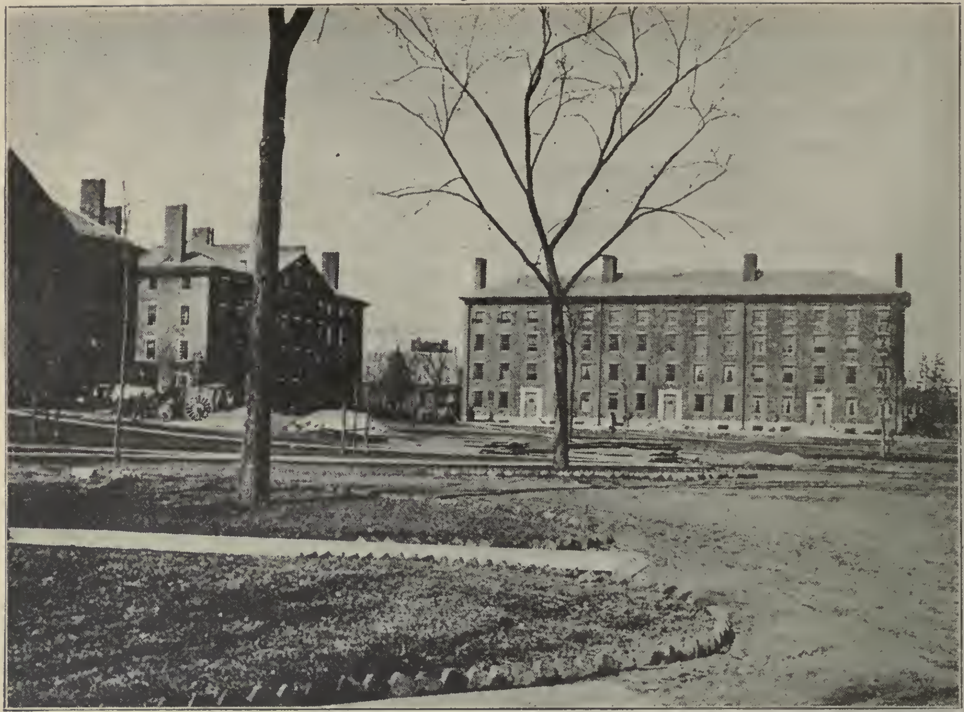
Trees were located and purchased in Watertown, Dedham, Cambridge, Roxbury, Norwood, Newton, Lexington and Bedford. The average distance of each tree from the Harvard Yard was nine miles. Thirteen trees were moved in the spring of 1916. The apparatus and laborers for this work were provided by the Lewis & Valentine Company, of Roslyn, N. Y., which furnished the careful supervision and improved apparatus to which the success of the work was largely due.

Moving and Planting the Trees

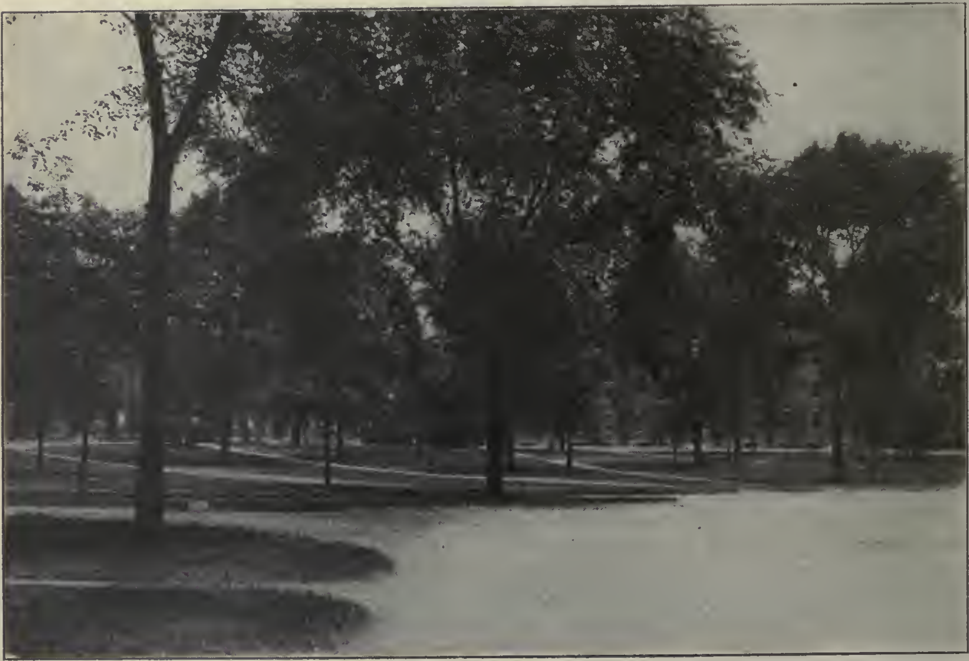
Because of the poor soil, it was necessary to prepare special tree pits. These were about 20 feet in diameter and 4 feet deep in the center. They were drained by tile drains running across the pit and terminating in a dry well. The original soil was replaced with better soil when the trees were planted. A little limestone was mixed with the soil to neutralize any acid condition. When soil containing organic matter becomes water-logged, a noxious decomposition often occurs which results in the formation of poisonous gases. Ground limestone will often prevent this condition.

When the trees were prepared for removal, the first operation was to dig a circular trench about 15 feet from the trunk. All roots extending beyond this area were cut. This trench was 3 feet deep and of sufficient width to permit the laborers to separate the roots with forks, working in toward the trunk of the tree. As soon as the roots were exposed, they were twisted into bundles and wrapped in moist straw.

When the roots had been exposed to within 4 or 5 feet of the trunk, no more earth was separated from them. This left the roots nearest the trunk in a ball of earth about 10 feet in diameter and from 2 to 3 feet deep. The tree was then pulled over with tackle so that it rested horizontally on the cradles of the mover. This left a large portion of the feeding roots in the soil in which they had grown, and every effort was made to keep the ball of earth intact. When the trees were planted, the reverse of this process took place. At the time of planting, the trees were well



THE HARVARD YARD IN THE SPRING OF 1916 BEFORE THE LARGE ELMS WERE BROUGHT TO THEIR NEW LOCATION



THE TRANSFORMED YARD. ALL OF THE LARGE ELMS IN SIGHT WERE BROUGHT TO THEIR NEW LOCATION FROM SURROUNDING TOWNS AND PLANTED TO RESTORE THE BEAUTY OF THE HARVARD YARD watered. This assisted in packing the soil close to the roots.

The amount of rough treatment a tree will stand and yet survive seems remarkable. For example, one tree was dug at Cambridge where a large tap root, about 5 inches in diameter, had grown directly into a well. This condition was not found until the tree had been partially dug. The root was cut, but the tree survived.

A number of additional trees were moved in the fall of 1916. These were somewhat larger than those moved in the spring, and some were moved longer distances. We again had an opportunity to note the apparent vigor of such trees. A severe snow-storm delayed the planting of one tree for a week after it was dug; and altho it was planted in frozen earth, it survived this exposure and is now vigorous and healthy.

The most important precautions in moving trees seem to be to prevent the roots from drying out while being moved, and to have them properly pruned after planting. Theoretically, at least, there is a balance between the roots and the top when the tree is growing in its natural location. One of the important functions of the leaves is to give out moisture. It is said that a large elm on a hot day in summer will transpire 100 gallons of water in 24 hours. There must be a sufficient number of roots to secure the moisture which is thus transpired by the leaves. When the roots of a tree have been injured, the leaves give out more moisture than the remaining roots can supply to the tree, which results in the dying out of the tissues and will cause rapid death. It is therefore obvious that, if a certain proportion of the roots are injured, a corresponding amount of leaf surface should be taken out of the tree to restore the balance between the roots and the top. This should not be confused with taking out a similar proportion of wood, for many of the branches bear few or no leaves.

For this pruning, each branch should be considered as a unit, and the twigs should be cut off so that the proper proportion of leaf surface will be taken from each branch. When such pruning is done, the trees should never be regularly clipped over, but each limb should be treated separately and the proper amount of leaf surface cut out. If the work is skilfully done, 30 to 60 per cent of the leaf surface can be removed without destroying the symmetry of the tree, and often the effect of this pruning can scarcely be noticed.

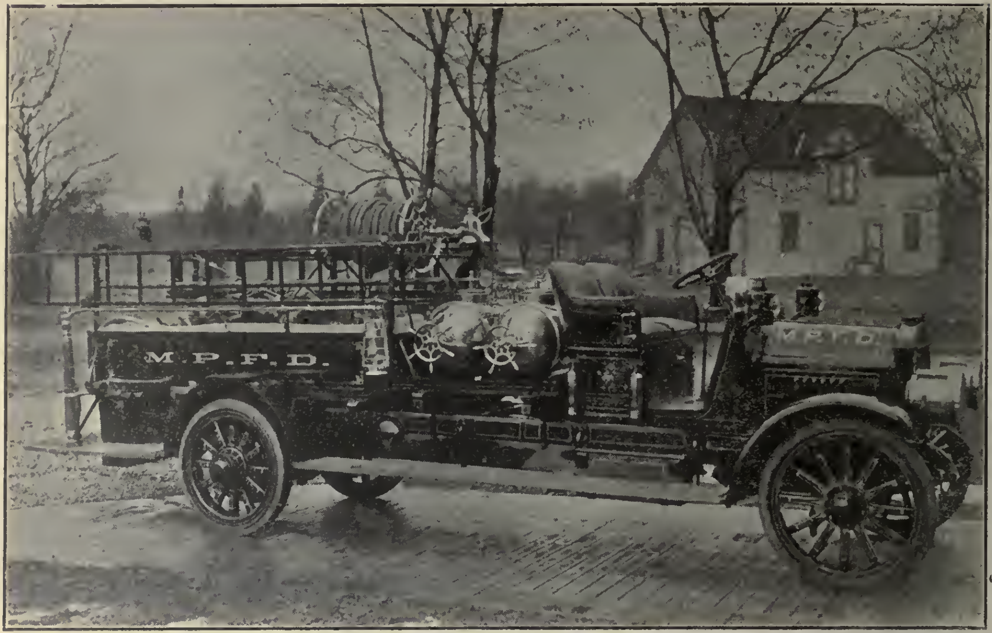
The writer believes that when large trees have died after being transplanted it has been due to lack of proper protection to prevent the roots from drying, or else to careless pruning.

Of twenty-five trees moved into the Harvard Yard in 1916, but two died. These succumbed to attacks of the elm bark beetle within a month. All the others have survived and have invariably grown faster; they are in better condition in their new situation than where they were originally located. From the writer's observation of a large number of trees which have been moved, he believes that if a tree survives the first year and receives proper attention thereafter, it will continue to live indefinitely; no case of a tree dying after it has survived two years has come to his attention.

The trees in the Harvard Yard have been watered frequently during dry spells. It is expected that no difficulty will be experienced from insects, for efficient methods of protecting them from the leopard moth have been discovered.

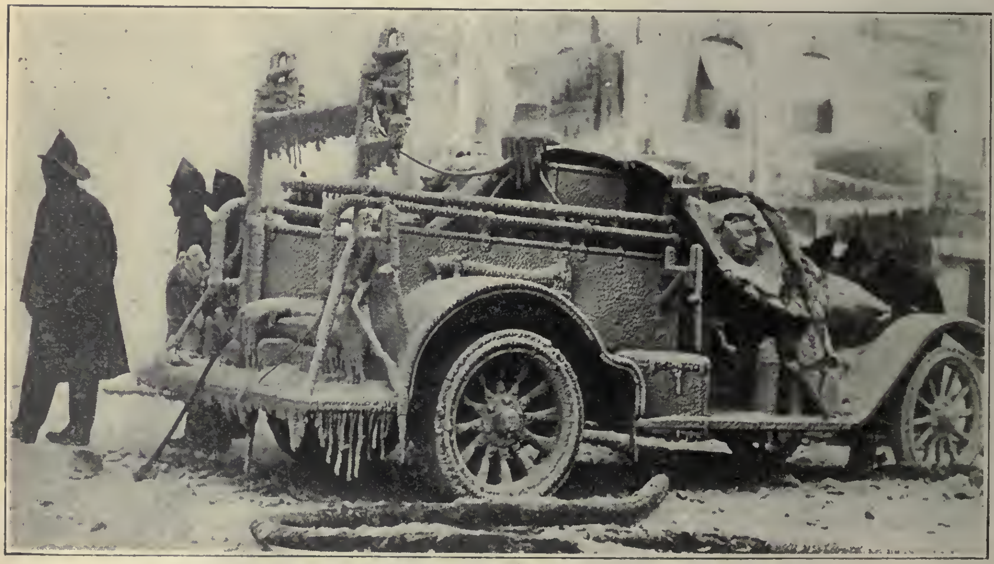
The Harvard Yard trees have now been planted three years, and, as previously stated, under most adverse conditions. The smallest tree was 12 inches in diameter and 35 feet tall; the largest was 26 inches in diameter, weighed more than 100 tons and was 50 years old. These trees are to-day in better condition than they were when they were planted. Sufficient time has now elapsed to prove that it is possible to plant large trees with a practical certainty of their surviving, thus saving from thirty to forty years in waiting for small trees to grow.

Motor Trucks in Municipal Service



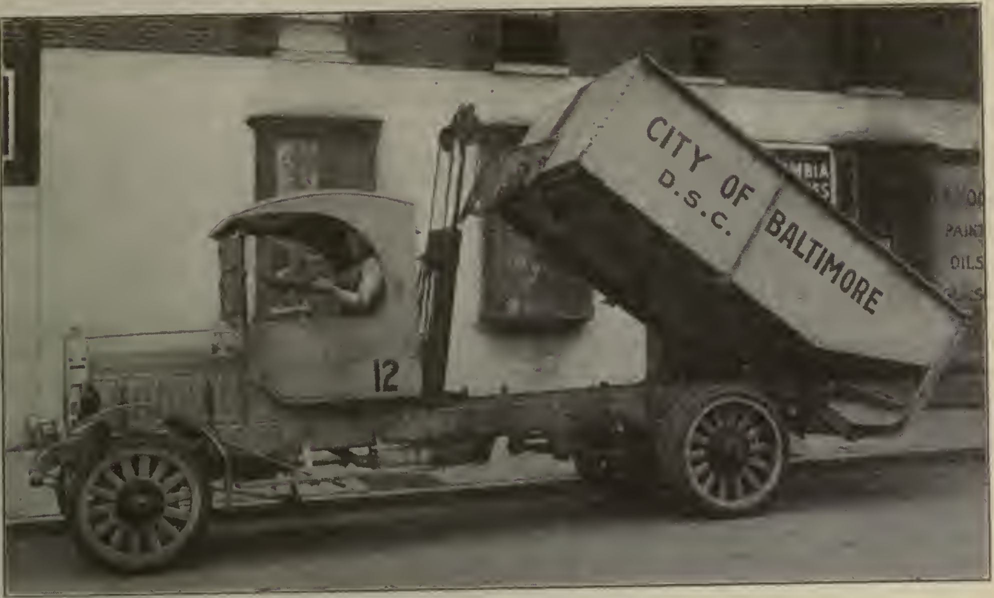
THE BORO OF MIDLAND PARK, N. J., DISCARDED ITS HAND-DRAWN FIRE APPARATUS FOR THIS FEDERAL TRUCK

The equipment consists of 2 chemical tanks of 200 gallons capacity each, 1,200 feet of water hose and 200 feet of chemical hose, 2 extension ladders, axes and other tools. On the running boards some 20 men can accompany the machine to a fire. The territory covered by this new apparatus is about 3 square miles, but adjacent municipalities where no fire department exists frequently call up the boro department for assistance.



Courtesy of American-LaFrance Fire Engine Co.

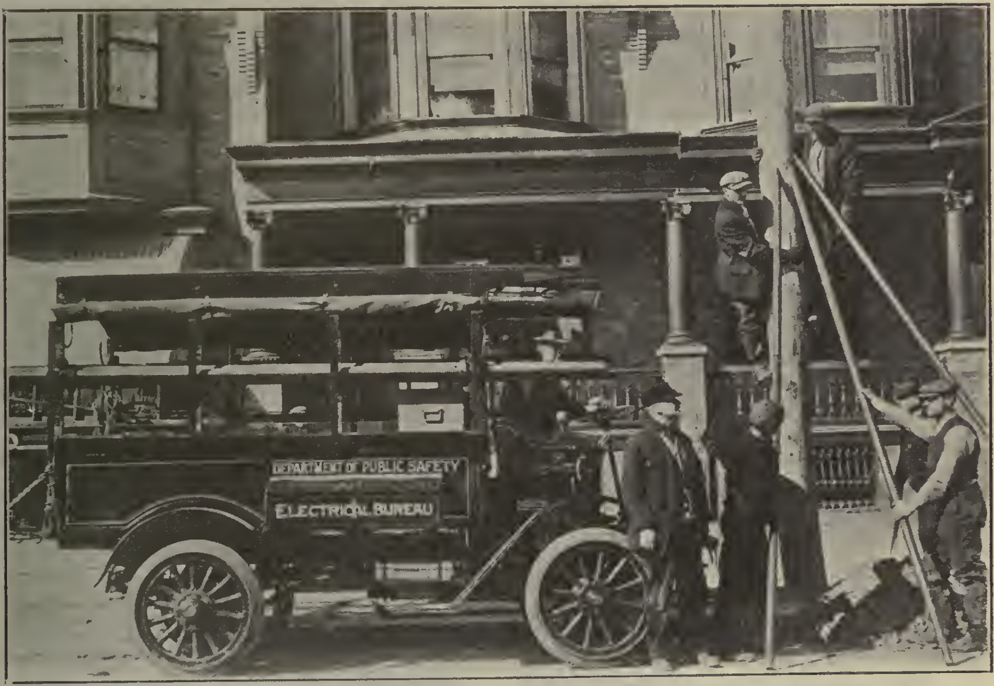
A COLD TURN FOR THE FIRE DEPARTMENT AT OMAHA, NEBR.



THE STREET CLEANING DEPARTMENT OF BALTIMORE, MD., HAS SIX OF THESE 5-TON WHITE TRUCKS IN SERVICE

These trucks are used for carrying the garbage from the outlying garbage platforms to the scows at the waterfront, where the garbage is then towed to the city ''Pig Farm'' on Bodkin Creek. In the winter months, when the garbage is much less in volume, these trucks are used for the collection of ashes in the apartment house section of the city. They are also used for the removal of snow from the center of the city.

The Department also operates four 2½-ton trucks of this same style for the collection of street dirt from the men that patrol the smooth pavements with the small hand carts. This work was formerly done by 20 men with horses and carts. This new way of collecting the dirt was adopted the first of June and is a great saving over the old method.



THE ELECTRICAL BUREAU OF THE DEPARTMENT OF PUBLIC SAFETY, PHILADELPHIA, PA., USES THIS AUTOCAR IN DAILY SERVICE

Let the Consumer Read the Meter

A Suggestion for Municipal Water and Light Departments

IN an endeavor to secure the reading of all meters at the end of each month, a light and power company in a small city in California has put into use a new system whereby the customer is asked to read the meter if the company's representative cannot secure an entrance into the house. Cards are printed and given to each meter reader, and in the event that he finds it impossible to get a reading, the card is placed under the door with the anticipation that the consumer will fill it out and send it to the office.

The card bears the statement: "Our meter reader has called and has been unable to get a hearing. If you will kindly mark on these dials [which are printed on the card] the position of the hand on your meter, your figures will be accepted for computing this month's bill. Please date and sign this slip and leave it at our office, or mail same at your early convenience."

The system has been tried out since July, 1918, and the company finds that it obtains about 70 per cent of the cards left, properly filled out and either mailed or brought to the office. Before the system was started the company had a large scattering list each month, because it was unable to get meter readings upon the first call, and sometimes even after several visits could not procure an entrance to the house. With this system the scattering list has been reduced to a minimum.

Such a system might be adopted advantageously by municipal water and light departments, thus insuring a more nearly complete record with a minimum of effort.

Further Comments on Sanitary Drinking Fountains

TO THE EDITOR OF THE AMERICAN CITY:

In reviewing the article "Common Sense, Science and Drinking Fountains" in a recent issue of your magazine, I find that the same confidence and assurance of safety is placed in any fountain with the slant jet as was placed in the vertical bubbler when people realized the danger of the common drinking cup. I am afraid, however, that our troubles are not ended along this line.

When hygienists realized the danger lurking in the common drinking cup on account of saliva (tenacious in character and practically insoluble in water) being carried from one mouth to another indiscriminately, the bubbling fountain with its filth came upon the scene and was heralded as a solution of the problem. Investigators soon proved, however, that bacteria and globules of saliva could be supported on the crest of the bubble for an almost indefinite period and would return to the nozzle when the jet was cut off, to again be supported by the next jet of water.

The slant stream fountain then made its appearance to lull all fears to sleep, but the late Major Kinyoun, U. S. Army Medical Corps, found that if cultures of B. Prodigiosus in egg albumen were dropped in the slant jet between the crest of the jet and the nozzle, the organism could be found in abundance on the nozzle a few seconds afterwards. This was accounted for by the fact that the velocity of the water was greater in the center of the stream than at the periphery, thus causing an eddy in the stream to the nozzle.

A perforated sleeve over the nozzle is used at present on what appears to be the most sanitary fountain, to avoid this return of water to the nozzle. The entire nozzle and sleeve is encased and drained to the bowl, and has been found to be self-cleansing. The greatest objection to overcome at present is the face guard, which, altho not coming in contact with the mucous membrane, may carry infection from an infected face to an abrasion on another face.

There is still considerable work to be done on this, the greatest of all public conveniences, and let us not cease until the fountain is above reproach from a scientific as well as a practical standpoint.

I. M. CASHELL,
City Manager, 1918; Health Officer, Bacteriologist, 1914-16.
Goldsboro, N. C.

The City's Legal Rights and Duties

Monthly Department of Information for City Attorneys and Other Municipal Officers, Summarizing Important Court Decisions and Legislation

Conducted by A. L. H. Street, Attorney at Law

Sewer Construction Contracts

Where a board of public improvements of a city acted in good faith in rejecting all bids under two different calls for proposals for the construction of a sewer, and awarded the contract to the best bidder on a third call, the proceedings were valid, altho the accepted bid was higher than a proposal received on the first advertisement. And where a municipal charter does not limit the contract price of an improvement to the engineer's estimate on which the work is let, a contract at a higher price may be awarded in good faith. Omission of a city to specifically appropriate enough money to pay its share of the cost of a section of sewer, prior to letting the contract, did not invalidate tax liens against lots benefited by the improvement, since the burden of the cost which the city must pay and that which the property owner is bound for are independent of each other. (Missouri Supreme Court, Heman Construction Co. vs. Lyon, 211 Southwestern Reporter, 68.)

Safety of Thorofares

If a guard-rail or other barrier is reasonably necessary to protect persons traveling over public streets or roads in the ordinary way and with due care on their part, it is the duty of the public authority in charge thereof, and of a person or corporation upon whom the duty may have been imposed by contract or ordinance, to build and maintain such barrier; and liability exists for damages resulting from breach of this duty. It is so held by the West Virginia Supreme Court of Appeals in the case of Pollock vs. Wheeling Traction Co., 99 Southeastern Reporter, 267, in which defendant was held liable for personal injuries resulting from plaintiff's being precipitated over a high embankment at a point where defendant had failed to maintain a guard-rail as required by its franchise.

Validity of Paving Assessments

Provision in a city charter that suit to contest the validity of a street improvement assessment must be brought within a certain time limit does not preclude a property owner from attacking such an assessment after that time limit on suit being brought against him to enforce an assessment lien and on its appearing that proceedings of a jurisdictional character were not taken by the city authorities. Where a city charter provided for street paving on petition of owners of sixty per cent of the property abutting upon a street, and for payment of the assessments in five instalments, the authorities could not disregard such a petition and proceed with paving in a manner which would have been proper had no such petition been presented—order the improvement on their own motion with provision for payment of the assessments within thirty days after acceptance of the work. (Texas Court of Civil Appeals, Wooten vs. Texas Bitulithic Co., 212 Southwestern Reporter, 248.)

Municipal Control Over Streets

Under a provision of the Alabama constitution conferring on municipal authorities control over the use of streets by public utilities, private enterprises, etc., the city of Montgomery was empowered to adopt an ordinance regulating the driving, parking and stopping of motor vehicles operated on the streets of the city for hire, and requiring chauffeurs driving such vehicles to procure licenses from the city and to give bond. So far as an act of the Alabama Legislature purports to forbid municipalities from imposing such regulations, and to reserve to the state complete regulation of such vehicles, the law is invalid as violating the constitutional provision above referred to. (Alabama Supreme Court, Orpheum Taxi Co. vs. City of Montgomery, 82 Southern Reporter, 117.)

Reducing Street Railway Fares

So long as it acts within its charter powers, a city council is an independent lawmaking body, and its ordinances cannot be questioned concerning the motives leading to their enactment. To entitle a street railway company to an injunction against reduction of street railway fares it is not necessary that it show that the reduced fares will amount to confiscation of the street railway property; it is sufficient to show that the fares will not yield a fair return upon the value of the company's property. But in this case it is found that the evidence fails to show that an ordinance of the city of Houston restoring a five-cent fare would deprive the local street railway company of a fair profit. (Texas Court of Civil Appeals, Houston Electric Co. vs. City of Houston, 212 Southwestern Reporter, 198.)

Taxing Telegraph Companies

In imposing an occupation tax for revenue purposes, a municipality acts as the agent of the state, and, where such tax is imposed on a telegraph company doing both an intrastate and interstate business, any deficit arising from the payment of a tax on the privilege of doing an intrastate business within the municipality becomes a charge on the revenue the company obtains from its intrastate business as a whole, and the tax does not become invalid as a burden on interstate business merely because the amount imposed by the municipality is greater than the company's net receipts in that municipality for intrastate business. This is the holding of the Nebraska Supreme Court in the recent case of City of Fremont vs. Postal Telegraph-Cable Co. (172 Northwestern Reporter, 525), in which an annual tax of $60 imposed on telegraph companies by plaintiff city was upheld.

Reasonableness of Street Railway Fares

A reasonable rate of street railway fares is a rate which yields a fair return on the value of property necessarily employed over and above expenses and depreciation. A rate netting 7½ per cent is a fair return. (Wisconsin Supreme Court, Milwaukee Electric Railway & Light Co. vs. Railroad Commission of Wisconsin, 172 Northwestern Reporter, 746.)

Reimbursement Against Sidewalk Injury Claims

A city on being mulcted in damages for injury to a pedestrian on a defective sidewalk in front of private premises is entitled to compel the abutting owner or occupant to reimburse it against such damages on its appearing that he caused the defect. If the city notifies the abutter of pendency of the pedestrian's action for damages, the abutter will become bound by any judgment against the city, as to the amount of damages, but may still avoid liability to reimburse the city by showing that he was under no obligation to maintain the sidewalks, or that the defect resulting in the particular accident was not one for which he was responsible. (Indiana Appellate Court, Home Brewing Co. vs. City of Indianapolis, 123 Northeastern Reporter, 721.)

Discharge of Civil Service Employes

The chief license inspector of a city was entitled to be retained, altho it beame necessary to drop a member of the department from the payroll, where he stood highest in the examinations and was oldest in point of service and certification, and consented to remain in the service at the salary of an inspector. He is entitled to recover pay for months during which he was wrongfully kept out of the service. (Colorado Supreme Court, Flower vs. Casey, 181 Pacific Reporter, 193.)

Effect of Testamentary Gift

The fact that a will giving property in trust for the maintenance of a free school in a city contained a request that the testator's family burial lot be maintained in good condition by the city imposed no legal obligation on the city to care for the lot. (United States Circuit Court of Appeals, Seventh Circuit; Laswell vs. Hungate, 256 Federal Reporter, 635.)

Missouri Special Tax Bills

In a suit brought by an owner of abutting property to enjoin issuance by a Missouri city of tax bills to a paving contractor on the ground of their invalidity, the contractor is a necessary party defendant. (Kansas City Court of Appeals, Wegenka vs. City of St. Joseph, 212 Southwestern Reporter, 71.)

Take Off the Brakes!

By John J. Murphy

Former Tenement House Commissioner, New York City

SELF-EVIDENT propositions are known in mathematics, but whether there are any such in civics or economics may well be doubted. The public is confronting the problem of how to increase the supply of habitable homes. It would seem, therefore, a self-evident proposition that if new buildings are heavily taxed anywhere, the greatest contribution which government can make to the resumption of building would be to take off such tax, temporarily at least.

The chief elements of cost which enter into a home are land, loan, material, labor and taxes. Land just now seems comparatively cheap; it always is when opportunity to use it is lacking. This is, no doubt, a delusive cheapness, for when demand reappears, the price will rise and the only limit will be the sky. Nevertheless, at present the price of land is less of an obstacle to improvement than usual. Loans are hard to get and costly. Materials are high, and so is labor. Taxes are rising and must rise more to balance the increase in price of everything else, for government service must appreciate as the price of everything else does. The only one of these factors which can be diminished by government action is certain forms of taxes.

Building costs have advanced from 35 per cent to 50 per cent. If new buildings were exempted from taxes for ten or twelve years, the builder would recoup enough to equal the increased cost of construction. Instead of resorting to this simple device, elaborate schemes which lead nowhere are proposed. Even conservatives are lending a reluctant ear to socialistic proposals for federal, state and municipal loans to "piece out" the sums which the lending companies are willing to advance. Such proposals obviously spell disbelief in the adequacy of the security.

Bills were introduced in the New York State Legislature providing for the exemption of new buildings, for short periods, too brief to overcome the handicap imposed by high prices. Even in this innocuous form the bill obtained no support.

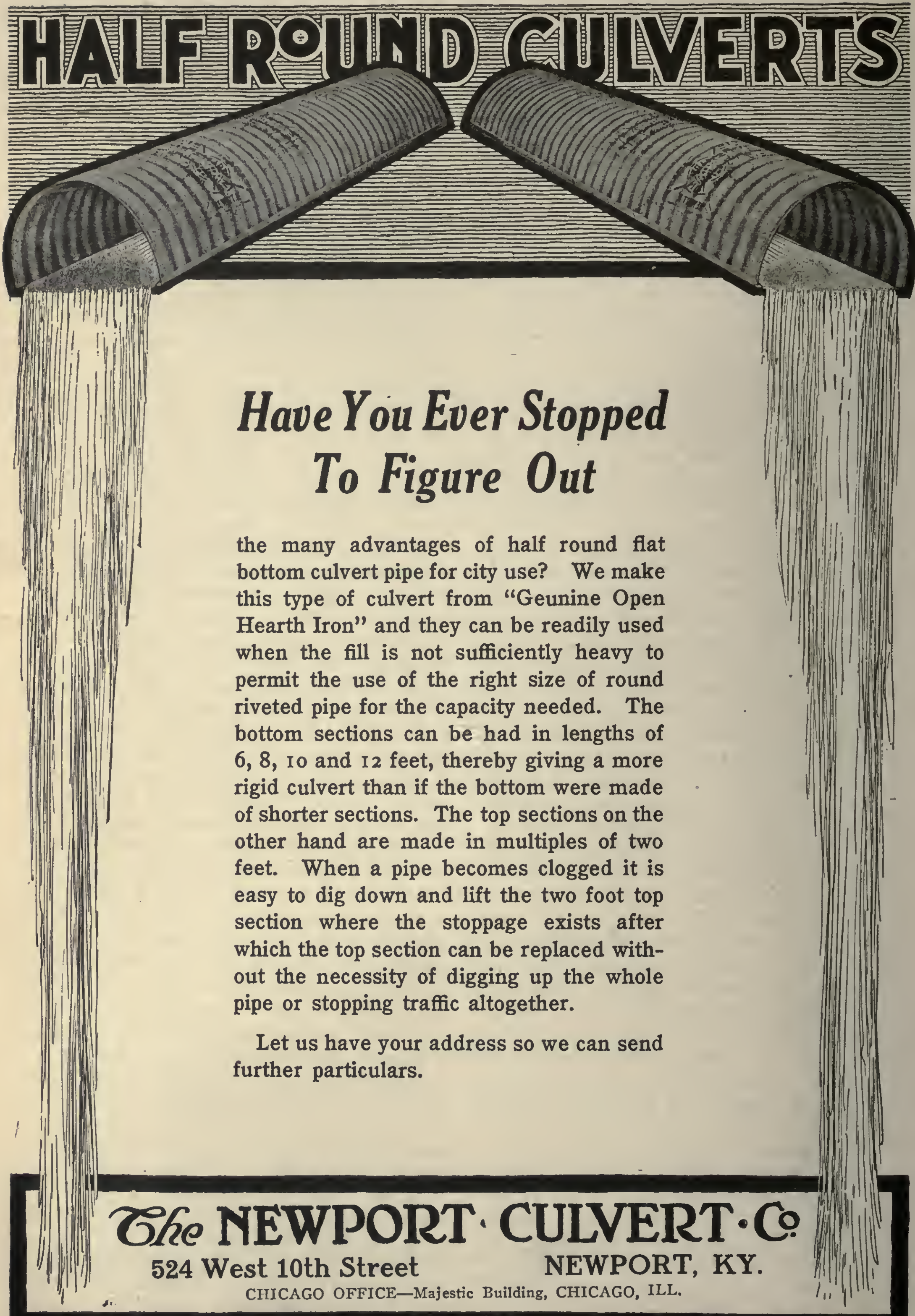
Objections Answered

Whence comes the opposition to so reasonable and simple a measure? The first objection comes from owners of existing houses, who say that it would be unfair discrimination against them. To this objection it should be a sufficient answer that the trend of events has made these owners a very big present in the form of enhanced values of existing houses. For almost the first time, houses long erected have sold for more than the actual cost of construction. The proposed exemption would only put the builders of new buildings in the same position where the owners were three or four years ago, and there would be no unfairness in that.

Another objection comes from the associated owners of very much run-down tenement property in the city of New York who, in spite of the pressure for apartments, have not been able to fill their old buildings. The last census made by the Tenement House Department shows nearly 18,000 vacancies, mostly located in the older parts of the city. The owners of such property are convinced that the shortage of housing does not exist. They are therefore strongly opposed to any plan to stimulate new building; their influence is disproportionately great with the boards which speak for the city's general real estate interests.

A third objection is that such a proposal is favored by single-taxers and that every measure which they propose must be viewed with suspicion by conservative citizens. To this objection it would seem sufficient to urge that if the measure itself has merit, it ought not to be discredited because it happens to be an unimportant feature of a radical program. Clearly the exemption of a certain class of buildings for a limited term of years, leaving all other taxes in full force, cannot be regarded as a long step toward the single tax.

Officials who are concerned about the practical rather than the theoretical aspects of the matter may want to know where the city can make up the revenue which seems lost by the exemption of new



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CHICAGO OFFICE—Majestic Building, CHICAGO, ILL.

buildings and by the abatement of liquor license taxes. To such it should be sufficient to say that the municipality will not lose by the exemption of buildings in the manner proposed, because if they are not exempt from taxes they will not be erected for a considerable period at least; hence there will be nothing to tax. The effect of the stimulation of building in the manner suggested will be to make land more available for use and consequently of greater immediate value, resulting in increased assessment, sufficient probably to take care of the additional costs imposed upon the community to supply the needs of the increased population. Under any conditions which permit its use, the price of land will rise as other things have done.

If the housing problem is to be solved, there can be no question that the method here proposed is the easiest. A brake is a good thing to keep on when a car is going down grade by its own momentum, but to clamp it on while it is climbing a steep hill is simply asinine. For a government to subsidize building with one hand and penalize it by heavy taxes with the other is to act with even less intelligence than its harshest critics ascribe to its general acts for the public welfare.

The Community Forum and the Chamber of Commerce

By A. Lyle De Jarnette
President, American Forum Association

THE Community Forum movement offers exceptional opportunities to commercial organizations to perform valuable services in community education as a means of promoting community solidarity. Of the hundreds of Forums in the United States and Canada, an increasing number are conducted by such organizations as Chambers of Commerce, or Boards of Trade or Rotary Clubs. The Forum method is fast gaining recognition among such organizations because it gives those who are interested in community development an opportunity to bring together all the groups of the community in frank and free discussion of current problems. The effect of the Forum, where it is well conducted, is the breaking down of group prejudices and class hatreds, clearing up misunderstandings, and encouraging a constructive attitude.

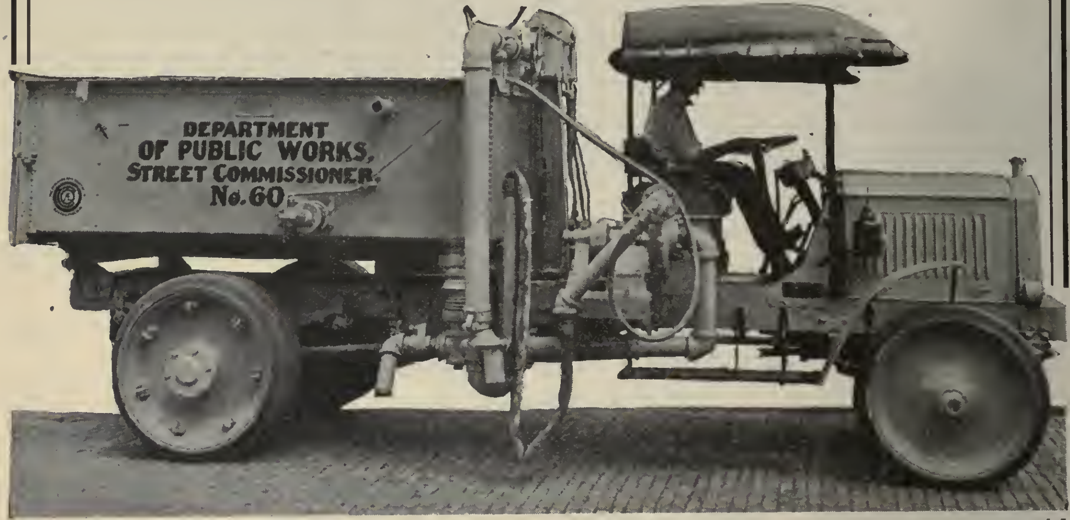
A Clearing-House of Ideas

Every locality abounds in a variety of theories and programs of social, economic and industrial progress, many of which are often destructive to the best interests of the city. Often these vagaries produce upheavals that serve no useful purpose beyond the fact that they emphasize the need of an intelligent interest in the problems that affect the community welfare.

Police and courts of law must not be regarded as substitutes for intelligent citizenship. Why not intelligently anticipate upheavals instead of waiting for some crisis? Upheavals usually result from misunderstandings which could easily be avoided if there were a clearing-house of ideas. The Forum is no longer an experiment in such community education; its value has been clearly demonstrated.

The Forum may be regarded as a social machine which is designed to perform in the community the service of gathering together its various elements. It is quite evident, in view of the usual community upheavals and the methods of dealing with them, that the machinery of society which has usually been relied upon has been a failure. Is it not time to attempt some other method than merely suppressing the human energy that manifests itself in unrest? Why not divert this energy to some constructive purpose? The Forum is especially valuable as a means of producing constructive educational results, and usually the Chamber of Commerce is the best group for setting up this new social machine. As a matter of fact, the Forum idea, unlike most educational institutions, was not born of the intellectual groups but had its origin in the markets of trade. Ancient Rome had its cattle, vegetable, wine, and other markets

Otterson Auto-Eductor



Revolutionizes Catch-Basin Cleaning

Bridgeport is another one of the many cities who are keeping ahead of the labor shortage problem by cleaning their catch basins with the Otterson Auto-Eductor. Not only do they save labor, time, and money but the work is done in a more sanitary and satisfactory manner.

A pipe is let down into the basin and the eductor operated on a water ejector principle, "ejects" all the debris—you can't see it—you can't smell it. No more unpleasant odors—no more splashing of mud.

It's high time that all progressive cities adopt the Otterson System of cleaning catch basins. It's a permanent municipal improvement.

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which were called forums. After a while these centers for the exchange of merchandise became centers for the exchange of ideas in the affairs of state, and in some cases the markets were entirely abolished and the Forum became a center of popular assembly. In its modern development, beginning at Cooper Union twenty-one years ago under Professor Charles Sprague Smith of Columbia University, it has followed more nearly the New England town meeting.

The fundamental principle of the Forum, which is absolutely essential to its proper and effective functioning, is that it exists as an instrument of expression for all the groups of a given community. The Forum is not a partisan machine; it is a platform from which all groups may be given equal opportunity to present to the community their claims for consideration. It does happen, in a few instances, that the forum is used for distinctly propaganda purposes—for example, a Democratic, Republican or Socialist Forum—but these are not representative of the whole community.

Organizing the Forum

The method of constituting a Community Forum is very simple. It should be organized so as to insure adequate community participation. The Chamber of Commerce may appropriately take the initiative by appointing one representative each from the Board of Education, the Federation of Women's Clubs, the important religious groups of the community, the local council of the American Federation of Labor, and the social workers' group. These, together with a representative from the Chamber of Commerce, constitute the Executive and Program Committee of the Forum. It may be desirable to appoint subcommittees which shall be responsible for working out such details of the Forum as publicity, securing a place of meeting, providing music, and securing funds. In order to coördinate the work each committee chairman should be a member of the Executive Committee.

As to speakers, if the Forum is well financed it may frequently have paid speakers, often from out of town. But it will increase the value of the Forum to the community if it makes frequent use of its best home talent for the discussion of community problems. The purposes of the Forum should be explained to the editors of the local daily papers, and each newspaper should be asked to appoint a press representative for the Forum. With this sort of coöperation the Forum will be assured of adequate and fair publicity. The finances may be provided by private subscriptions, by collections taken at the meeting or from funds of the Chamber of Commerce. Since the Forum properly organized and managed is a community institution, every member of the community will probably be much more interested if he is given an opportunity to make a small contribution to its support.

Details of the Meeting

It is not difficult to conduct a Forum, provided those who undertake its management combine common-sense with the desire to play fair with all the groups of the community. The usual method is to give the first forty or fifty minutes to a speaker who has been selected because of his expert knowledge upon the subject under discussion. At the close of his address an opportunity is given for questions from the floor, perhaps twenty-five or thirty minutes. Following this period of questions, opportunity is given in many forums for five or six four-minute speeches from the floor, and the last ten minutes is given to the chief speaker of the day to round out the discussion. As a rule, no person in the audience should be allowed the privilege of more than one question or speech. As far as practicable, equal opportunity must be given to every member of the audience. Those who speak less frequently should be recognized first, in order to avoid the monopolizing of the period of discussion each week by the same group.

It is of the greatest importance to success that the Forum have a good chairman, a man known in the community as broad-minded and tolerant and esteemed by all the groups, a man who can preside with dignity and fairness to all.

Properly conducted, the Forum is an efficient means of popular adult education. Ignorance, misunderstanding, discontent, prejudices and class hatred are a community's greatest liabilities. The Forum is designed to correct misunderstandings, promote tolerance, supplant ignorance, and thus turn a community's liabilities into assets.

Editorial Note.—Mr. De Jarnette's pamphlet on "How to Start a Forum in a Chamber of Commerce" can be obtained after October 20, 1919, from the American Forum Association, 280 Broadway, New York City.

As she locked the last door a horrible thought came to her—suppose a fire should start?

Barred windows, locked doors

THE new officer of a girls' reformatory in a Middle Western State was very young and she hadn't learned that one must wait for the public to wake up to the cry of humanity.

So she made the first night's rounds in her corridor with a hopeful heart, glad that she had her chance to help these unfortunate girls. She looked into each little room with its barred window, saw that each girl was "safe" and locked the door behind her.

Locked in! Windows barred! Suppose a fire should start?

She put the question to the superintendent, an earnest woman of unusual capability, and learned that similar conditions exist in such buildings all over the country. They exist in asylums for the insane, prisons, houses of correction, etc.

The common dictates of humanity, you think, must provide some sure and certain means of putting out fire as soon as it starts.

But the trouble is that the officers in charge, who realize the danger, are generally without influence to secure any such equipment.

Only automatic protection like the Grinnell Sprinkler System can protect the inmates of training schools or penal institutions where locked doors, of necessity, prevail. Night and day the little sprinkler head is on the watch, ready to find fire, put it out, and send an alarm —all automatically.

Where the inmates must depend on the presence of mind or heroism of some officer who carries the keys, you may be sure that death by fire will be faced by some victims sooner or later.

Some five billion dollars of business property has been protected from fire by automatic sprinklers.

Meanwhile our wonderful humanitarian institutions and our fine schools continue to burn and the toll of victims grows larger each month.

With a one cent post card you might save lives. Who knows? Should you hesitate to send for a free booklet that tells what to do?

Read—"Fire Tragedies and Their Remedy"

If you feel too indifferent to send for a free booklet telling what to do, what right have you to blame others when a horrible calamity occurs in your town? Think of your schools, hospitals and asylums and write today, now, for this intensely interesting booklet. Address General Fire Extinguisher Company, 283 West Exchange St., Providence, R. I.

GRINNELL

AUTOMATIC SPRINKLER SYSTEM

When the fire starts the water starts

News and Ideas for Commercial and Civic Organizations

Bridgeport Chamber Attacks Smoke Nuisance

Bridgeport, Conn.—The Smoke Abatement Commission of the Bridgeport Chamber of Commerce sent the following letter early this summer to the major coal users in Bridgeport in an effort not only to solve the smoke problem, but to relieve the shortage of fuel, which gives evidence of being as great the coming winter as it was last:

Dear Sir:

As a big user of coal you have a primary interest in smoke abatement, and the Chamber of Commerce is anxious that this problem be tackled by those who are at once interested and informed.

The question of smoke pollution, with its consequent effect upon health, cleanliness and fog, has occupied many municipalities' attention, sometimes resulting in stringent smoke nuisance laws, which are difficult to meet and usually costly in the enforced alteration of equipment.

Furthermore, the fuel situation is not in a satisfactory state, as is evidenced by the fact that prices have not gone down from their war-time level, and in all probability will rise still further this fall.

The improvement of efficiency, which is necessarily the result of proper smoke elimination, will naturally help to relieve the situation in shortage of fuel, much along the same lines as those so successfully pursued by the local Fuel Administration Committees.

The Chamber of Commerce believes that, following the example of Pittsburgh, much can be done by the manufacturers to save their own money and anticipate the possibility of undesirable smoke restriction laws.

We are confident the enclosed outline will suggest a reasonable approach to the problem, and that you will be glad to join with the other major industries of the city in its solution.

Very truly,

Bridgeport Chamber of Commerce,
Seward B. Price,
Executive Secretary.

A questionnaire covering the operation of steam boiler plants accompanied the letter, as well as the outline referred to, which is entitled "Outline of Proposed Organization and Work of a Smoke Commission." The Bridgeport Chamber will be glad to supply copies of the questionnaire and outline to any who may inquire for them.

The Smoke Abatement Commission includes thirty power engineers, who are undertaking the work of smoke abatement in the Bridgeport district in a most thoro manner. The Chamber's Industrial Engineer has specialized in combustion and is well qualified to lead the movement.

SEWARD B. PRICE,
Executive Secretary, Bridgeport Chamber of Commerce.

United Effort Gets More Money for St. Paul Schools

St. Paul, Minn.—The people of St. Paul on July 1 passed by a vote of about four to one a charter amendment increasing very substantially the amount of money available for the Department of Education. The size of the majority was the outcome of the aggressive effort put forth by many civic organizations, and was an excellent demonstration of the way in which popular local government can function under the right impetus.

Four years ago a million-dollar school bond issue was defeated. Two years ago a three-million-dollar bond issue was passed, but a charter amendment to remove the limit of $6 per capita a year for school expenditures failed. The amendment which passed this year not only took off the $6 limit for school expenditures, but raised the total limit from $24 per capita per annum to $30.

The outcome of this election indicates that a great change has taken place in the attitude of the citizens toward public enterprises in the last two years, due perhaps to the war, which taught people how to pull together when grave crises arose. This year the schools were in most desperate need of help, and the business men, working men, parents and teachers saw that it was necessary for all to unite their forces in order to save the situation. Because of the charter limit of $6 per capita, the

Efficient Police—For A Dollar A Day

The policeman has a well developed sense of responsibility. You pay him to have it.

But there come times when he's tempted to shirk the job. All the more so, when there is no check on his movements. He reasons that skipping a trip or two won't harm anyone—and no one will be the wiser.

Unfortunately—no one knows when trouble is going to break. Nothing may have happened in that beat for months yet the very hour the policeman is absent there is a housebreaking he might have detected or a fire in the residence district he might have halted—or a holdup he might have prevented.

You can't have policemen everywhere at one time—but you can and do plan to have them cover all the territory at fairly frequent intervals.

If they are doing it—your city is getting good protection.

Do you *know* what they are doing?

You *can* know what every man is doing every minute of the day and night—without expensive central office supervision or a complicated electrical system.

A Dollar a Day for a year will furnish an indisputable record of what all your men are doing. And we prove it before you pay.

Other live cities have found it solves the problem for them. Why not you?

Interested?

If you are a City Official

Write for our book
"The Key to Vigilance"

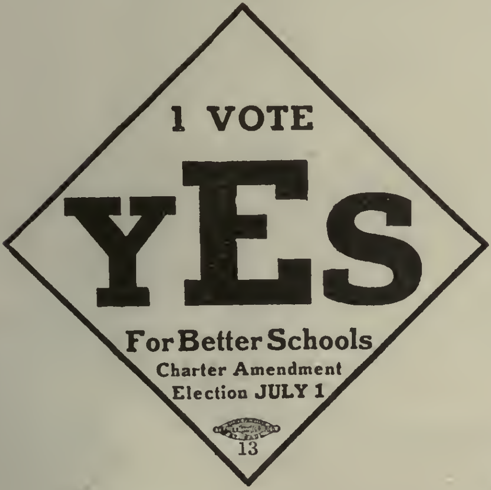
HARDINGE BROS., Inc.

4149 E. Ravenswood Ave. Chicago, U. S. A.

SCHOOL TEACHERS TAGGING BUSINESS MEN LEAVING THE ATHLETIC CLUB, IN THE BETTER SCHOOL AMENDMENT CAMPAIGN IN ST. PAUL, MINN.

salaries of the teachers had remained practically stationary for several years. Adequate Americanization work and vocational training, and even the building of new schools, were all held up because there were no funds with which to pay the teachers and purchase the supplies. The future of the city's educational system was in jeopardy. Civic leaders knew that, and agreed that another effort must be made to change the charter. They also believed that if every voter could be made acquainted with the facts, adequate relief would be forthcoming.

A new charter amendment was drafted and agreed upon by the representatives of the St. Paul Association of Public and Business Affairs, the Trades and Labor Assembly and the teachers' organizations which are affiliated with organized labor, the city officials, particularly the Department of Education, and representative groups of women's organizations. This group then organized a campaign Committee of One Hundred for Better Schools, which conducted a vigorous campaign of education. The newspapers gave the finest possible support to the amendment. Literally scores of public meetings, in which the audiences had explained to them the needs of the school system, were held in every part of the city. At graduation day the message was reiterated effectively.



I VOTE

YES

For Better Schools

Charter Amendment

Election JULY 1

13

Little window cards with the words "Vote Yes for the Better School Amendment" were circulated. Large signs with similar wording were used on automobiles. More than one hundred excellent posters were prepared by the school children and displayed most effectively in the store windows. A tag day was organized, and on the day before the election a group of school teachers tagged 100,000 people with tags bearing the legend, "I Vote Yes for Better Schools Charter Amendment—Election July 1."

When the vote was announced, those who had devoted themselves to the campaign so assiduously felt well repaid. The expenses were less than $600, which was raised by popular subscription. Advocates of progress will now take courage, for they have seen the workman and the employer, the parent and the teacher, the commercial organization and the labor organization all pooling their efforts for the good of their

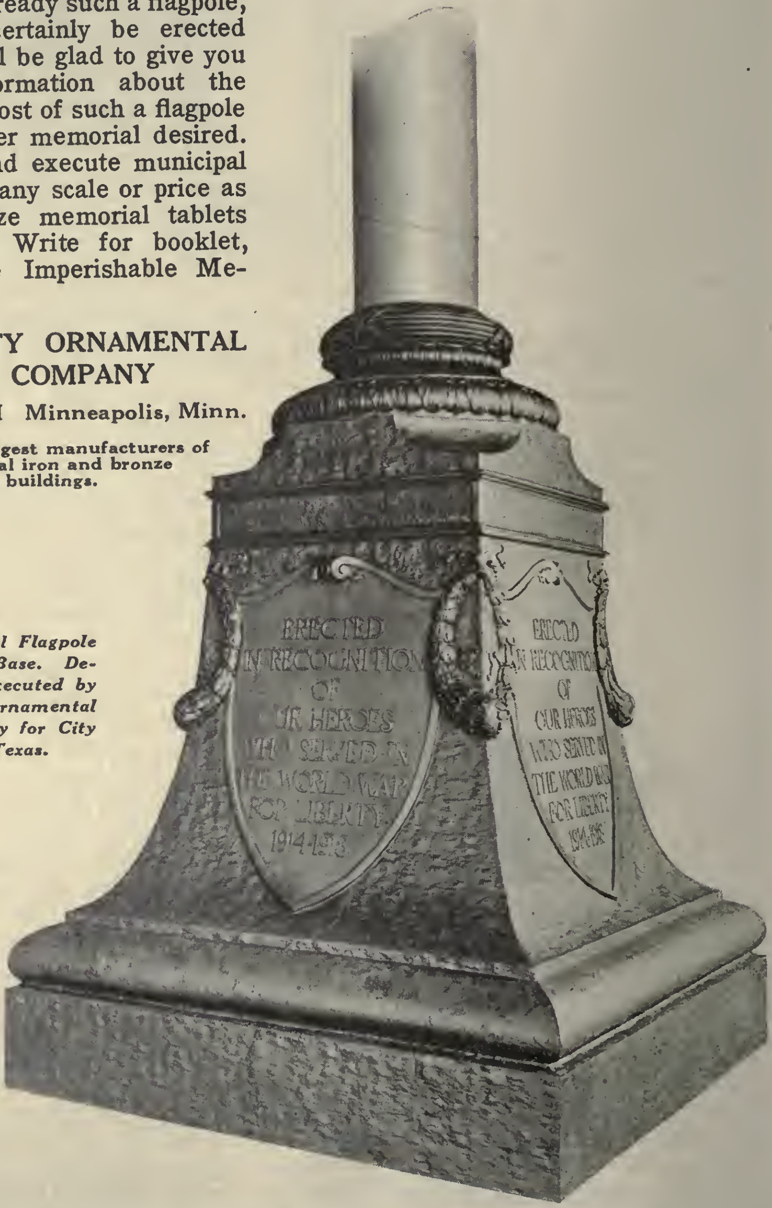
Has Your City a Real Flagpole?

There is no more appropriate memorial to the soldiers than a steel flagpole with bronze base similar to the one illustrated here. If your city has not already such a flagpole, one should certainly be erected now. We will be glad to give you complete information about the erection and cost of such a flagpole or of any other memorial desired. We design and execute municipal memorials of any scale or price as well as bronze memorial tablets and statues. Write for booklet, "Bronze—The Imperishable Memorial."

FLOUR CITY ORNAMENTAL
IRON COMPANY

Department M Minneapolis, Minn.

Among the largest manufacturers of ornamental iron and bronze for buildings.



100 Foot Steel Flagpole with Bronze Base. Designed and Executed by Flour City Ornamental Iron Company for City of Houston, Texas.

community in times of peace as well as in times of war.

C. W. PFEIFFER,
Public Affairs Secretary, St. Paul Association of Public and Business Affairs.

Housing in the Schools

Cincinnati, Ohio.—The problem of teaching tenants to live properly in their homes, to know the value of light and air, to have proper regard for the owner's property, to understand how to utilize and not abuse sanitary conveniences, and to take care of public parts of buildings used in common by several families, is one of the most perplexing problems confronting the housing worker. Much has been done in several cities by the visiting housekeepers who go into the homes to teach mothers the essentials of good housekeeping. That plan has worked successfully. There is no doubt, however, that the greatest hope of teaching proper housekeeping methods lies in reaching the children thru the public schools. Their minds are more plastic. They are constantly imbibing American habits and American standards of living. They naturally aspire to better things.

The Cincinnati Better Housing League has, with the cordial support of the Superintendent of Public Schools, put into effect a plan for teaching children the essentials of good housing. It gives promise of being entirely successful. For the present the plan is being used only in the schools in the tenement districts, for it is felt that the greatest need is there. The plan is as follows:

The Secretary gives a talk to a general assembly of the pupils of the sixth, seventh and eighth grades. The talk is brief and snappy, touching only on the simple principles that the children can grasp, urging each one to constitute himself a junior sanitary police officer to watch over the cleanliness of the house he lives in, and emphasizing the essentials of the right kind of home. The talks are made lively and interesting by asking the children questions and getting them to tell how they think they can help to keep their homes right, to prevent fires, and the like.

In one school, at the end of the Secretary's lecture, the children did the questioning. They showed that they had received intelligent instruction from their teachers by asking questions that one might well expect to hear at a housing conference. Among the questions asked were: "Who pays for the work done by the Better Housing League?" "What men in Cincinnati are interested in it?" "In what country did the better housing movement start?"

At the first civic lesson following the talk in the school, the eighth grade devotes the entire lesson to a study of the League's educational pamphlet, "Health, Home and Happiness." The teacher then asks the pupils to write essays on "The Proper Care of The Home." The best five essays are selected by the teacher and sent to the Better Housing League, which awards for the best essay a certificate reading as follows:

"This is to certify that .... submitted the best and most original essay on "The Proper Care of The Home" in an essay competition among the members of the Civic and Vocational League Club of the .... School.

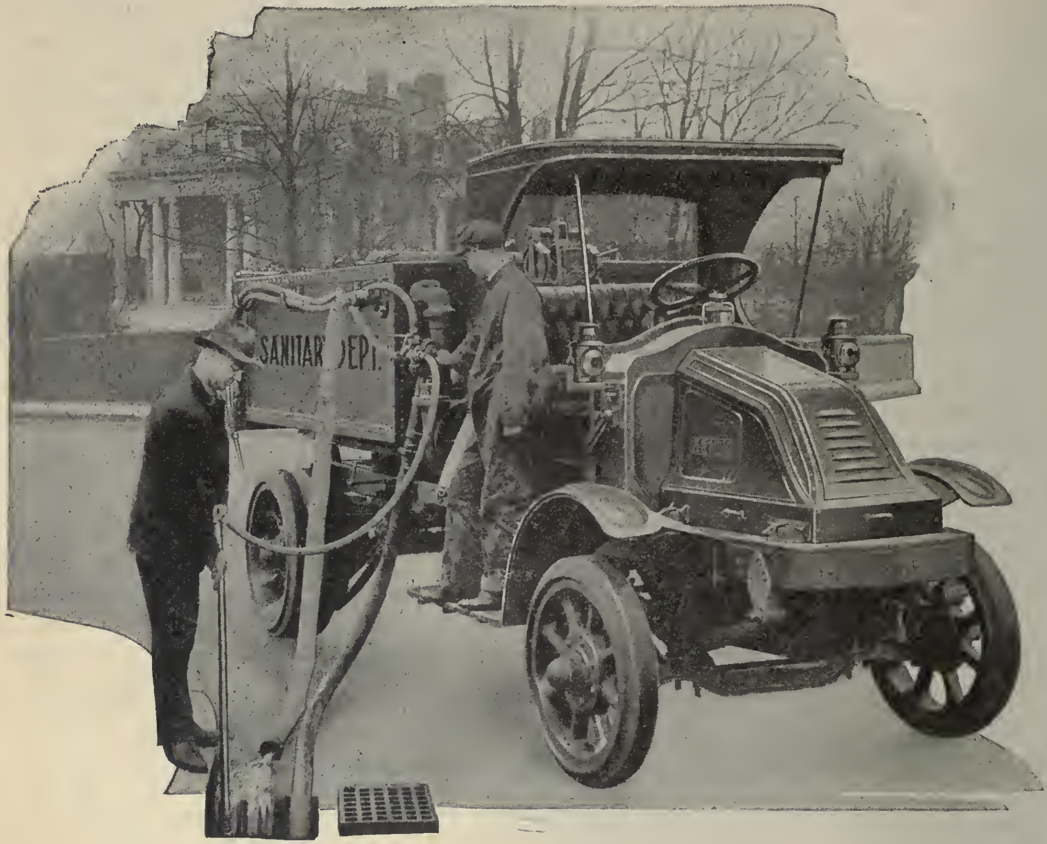
Awarded by the Better Housing League .... date."

The first essay on which the certificate was awarded showed a remarkably clear understanding of the subject, considering that it was written by an eighth grade pupil. "Looking back," said the little girl, "we find that the more civilized and educated the people are, the better the housing conditions. Therefore, we, the people of the United States, should have sanitary and clean homes, especially if we wish to rank as a leading nation. * * * For it is the same with the human body as with a plant. Put it in a light, airy and clean place and it thrives, but put it in a dark, musty place and you soon have a drooping, sickly specimen. If a plant is worthy of care and attention, how much more so is the growing child that will be the future citizen?"

BLEECKER MARQUETTE,
Executive Secretary, Cincinnati Better Housing League.

La Porte's Housing Plan

La Porte, Ind.—The La Porte Chamber of Commerce has derived great benefit from studying the ideas of other cities on housing, and the La Porte Housing Corporation has been evolved from this study. The greatest problem in providing more houses is, of course, one of finance—that is, the need of funds to supply the difference between what a workman can pay down and what he can borrow at a bank. If he can pay down 20 per cent and borrow 50 per



HOW are you cleaning your catch basins and sewers? In the old slow, expensive and disease-breeding way, with piles of filth on your streets? Or the "SECO" way?

The "SECO" Portable Pumping Apparatus cleans sewers and catch basins at a saving of 50 to 90% over the old way.

This apparatus is mounted on a special

KELLY-SPRINGFIELD CHASSIS

Write for Full Information and Catalogue

THE SPRINGFIELD ENGINEERING COMPANY

SPRINGFIELD **OHIO**

cent on a first mortgage, 30 per cent must come from some loaning plan. This difference the La Porte Housing Corporation is endeavoring to supply.

Applicants for houses select their own lots and plans. For the most part, the Housing Corporation builds what they want where they want it. Their decisions, however, are made subject to approval by the corporation, which is obliged to keep in mind its security for the loan. The Housing Corporation holds the title, secures a first mortgage on the property, and sells to the purchaser on a contract, payments being made monthly. The payments are apportioned to cover a period of one hundred months, or shorter periods when the customer can pay up in less time, and this constitutes an amortization plan. After the purchaser has paid off his first mortgage by this amortization plan, he receives his deed and title to the property, and the corporation is relieved. In figuring the payments, every item of indebtedness is included, and is figured over and above the initial payment.

The applicant is allowed to select his own house plan in the hope that his interest in the city will be more permanent than it otherwise would be. The corporation does not expect to make any profit out of the enterprise, which was undertaken solely with a view to relieving the housing situation in La Porte. The promoters plan to return the money to the original investors by a liquidation method explained in a mimeographed outline of the plan which the corporation has issued, and the investment is being safeguarded in every way. Copies of the outline may be obtained by applying to the Chamber of Commerce.

L. M. VAUGHN,
Secretary-Manager, La Porte Chamber of Commerce.

Brainerd's Monthly Waste Paper Day

Brainerd, Minn.—The plan adopted by the Brainerd Chamber of Commerce for disposing of the waste paper that accumulates in the community has proved very successful. It is carried out largely by the school children, hundreds of whom participate in the work. On a certain day each month, called Waste Paper Day, the children collect all the waste paper they can lay their hands on and pile it into a freight car that is left on a side-track of one of the railroads, which transports it to one of the large cities. The car is placed where it can easily be reached by the children.

Waste Paper Day is a lively one in Brainerd. The youngsters can be seen with

CHILDREN AT COMMUNITY WASTE PAPER CAR, BRAINERD, MINN.

Buy One "Mutual"

(2 ton—3½ ton—5 ton)

Put it into your hardest service, side-by-side with the truck or trucks that you now consider to be the "best." Keep a careful record of its ton-mile performance, all costs counted.

A Whole Rich County back of its Only Industry
MUTUAL

"Yes, let us buy one 2 ton MUTUAL and watch its work. Their argument seems sound and their specifications are remarkably good."

MUTUAL—"America's Greatest Truck"

SOMEBODY *had* to build *"America's Greatest Truck"*—for the time was ripe for another step forward in truck design, engineering and construction—a step toward greater endurance, better control and greater economy under heavy haulage conditions.

There were so many good trucks on the market that it was no small task to create a machine that would be recognized immediately by every competent authority as enough better than the best of the rest to justify us in advertising it as—

"America's Greatest Truck"

We chose the safe way—analyzing all modern trucks and studying the features that gave the most satisfactory service under the most exacting conditions.

Then we spent a year *engineering* these greatest units into one "super-truck"—adopting each unit in so large a size that the MUTUAL truck could always be safely given a

50% Overload

AND, after it was all completed, we figured our costs, adding only 9% for *capital's* share—and were pleased, mightily, to find that we could offer this truck at a remarkably attractive price.

How Can We Over-size, Over-power, Yet UNDER-PRICE the MUTUAL TRUCK?

Because our factory is strictly modern and our "overhead" low, with no excessive salaries.

And our financial burden is light, as we need provide for dividends on a relatively low capitalization.

For, our Company is, in a large sense, a community enterprise, in which the dominant purpose is to build a vast industry that will ultimately bring thousands of skilled workers to Sullivan County, Indiana, by making this county not only the home of "America's Greatest Truck," but of America's Greatest Truck *Company*.

SPECIFICATIONS (2 Ton)

Comparing with most 3 ton trucks

Wisconsin 4x6 "three-ton" Engine.
Duplex Co.'s Duplex Governor.
Westinghouse Electric Starting and Lighting.
Hele-Shaw Universal Clutch.
Spicer Universal Joints—3 joints in shaft.
Fuller-Transmission (3 ton size). 4 Speeds and reverse.
Sheldon 2½ ton Worm-drive Rear Axle (built for 20% overload.)
Sheldon Ball-Bearing Steering-Knuckle Front Axle
Parish & Bingham Pressed Steel Frame.
Mather Chrome Vanadium Springs.
Bound-Brook Oilless Bushings, Thruout.
Smith Metal Wheels for Solid Tires.
Dayton Steel Wheels for Pneumatic Tires.
Goodyear or Firestone 36x4 solid front tires.
Goodyear or Firestone 36x8 solid rear tires.
Goodyear or Firestone Pneumatic Tires (extra).
Ross Steering Gear—20 in. wheel.
Perfex Radia or Cast Tank Type.
Bosch Magneto—dust proof, water proof.
Stromberg Carburator.
Powell Muffler—12 sections.
Weather-tite Cab, fully enclosed. Lazy back seat.
Electric Steel Castings—at vital points.
25 Gallon Gasoline Tank.
2½ Gallon Reserve Lubricating Oil Tank.

OUR Directors and Stockholders, include 500 wealthy farmers, stock-men, coal mine owners, proprietors of natural gas and oil properties and the leading business and professional men of the City and County of Sullivan, Indiana.

They realized that the way to build a great industry *quickly* is to give truck buyers more for their money than they can secure in any other truck at any price. And, that, by building, in very truth—

"America's Greatest Truck"

and sacrificing their own immediate profits, as *investors*, they will all share in the permanent benefits of enlarged home markets for their products.

Every buyer of a MUTUAL TRUCK, therefore, gets the benefit of a county's ambition to make Sullivan the home of an industry that will soon cover acres of busy buildings.

Send for circular giving the super-specifications on which we base—and prove—our claim.

MUTUAL TRUCK COMPANY
Sullivan, Indiana, U. S. A.

Regular Equipment

Tho' our prices rule lower than are asked for high-class trucks of equal rating, and tho' the Mutual is *oversized* thruout we give as part of regular equipment many things that are offered only as high-priced "extras" by other truck makers, including—

Electric Starting and Lighting.

Metal Wheels—costing us 55% more than wood.

36 x8 rear tires, where others give 7 in. or 4 in. dual.

"Weather-tite," easy-seat cab, worth at least $150 extra.

Over-size pressed steel frame.

Bound-brook-Bushings.

Four Speeds forward and reverse.

Electric Steel Castings at vital points.

Reserve Lubricating Oil Tank.

their cartloads of paper coming from every direction. Very little paper is to be found in the city after one of these monthly clean-ups. The work has earned for the children about $1,000, all told, the majority of which has found its way into the savings banks. The merchants also make use of the plan to rid themselves of their waste paper.

FRED T. LINCOLN,
Secretary, Brainerd Chamber of Commerce.

Chamber Committees Attend City Council Meetings

CANTON, ILL.—To educate its members in municipal affairs, to keep a check upon the Aldermen, to show the City Council that the Chamber of Commerce is interested in its every move and is ready at all times to coöperate with it, the Canton Chamber a few months ago created special committees of five members each to attend the two regular sessions held during a month. The plan has been in operation for about six months, and results are already apparent.

The first committee to attend was composed of the entire Board of Directors, and at this meeting the chairman of the Chamber's Hard Roads Committee and the Secretary-Manager laid before the City Council the need for connecting certain stretches of pavement with the hard roads of the near-by township. A special committee of the Aldermen was appointed to coöperate with the Chamber of Commerce in formulating the plans for financing the pavement, which has now been completed.

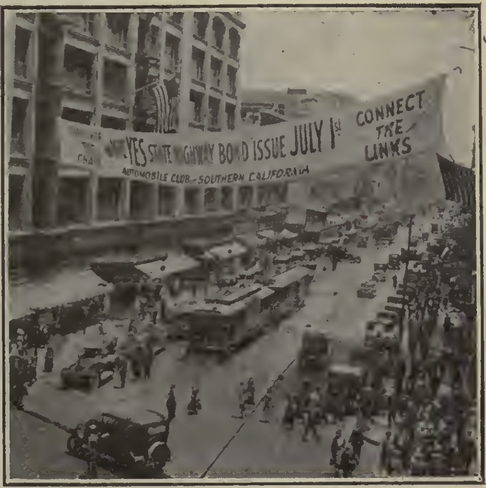
The members who have been present at these council meetings have expressed the great value of such attendance in that it has given them an insight into the way in which the city's affairs have been conducted in the past. Very few citizens had previously paid any attention to the city government, or even thought of the government as not being the best that could be secured. The plan is to eventually cover the entire membership by appointing a new visitation committee each month, and to thus arouse all the members to the city's need for a more constructive form of government. The Chamber of Commerce has been regarded by some of the Aldermen as an organization of business men formed for purely selfish business purposes, and the attendance of the Chamber's committees has done much toward developing a better feeling between the two bodies.

The selection of special committees to attend council meetings is the first step which the Chamber of Commerce has taken towards getting its members individually interested in the city government and in thinking about the various forms of government in cities of similar size, and ultimately deciding whether our government is the most successful form.

R. C. BRETH,
Secretary-Manager, Canton Chamber of Commerce.

No Billboards Mar the Effect of This Good Roads Banner

LOS ANGELES, CAL.—One of the few arguments in favor of conspicuous signs and billboards is the fact that they can be used to advantage occasionally for promoting civic improvements Los Angeles recently conducted a vigorous campaign for abolishing billboards and got rid of six miles of them, but permitted the banner in the above picture to be strung across its main artery of traffic to interest the citizens in the $40,000,000 road bond issue just authorized by a vote of 7 to 1. This picture shows an effective method of securing temporary publicity of great prominence and of much greater effectiveness than would be possible on billboard space or in competition with billboards.


YES STATE HIGHWAY BOND ISSUE JULY 1st
CONNECT THE LINKS
AUTOMOBILE CLUB - SOUTHERN CALIFORNIA

THE LOS ANGELES GOOD ROADS BANNER

MORRIS M. RATHBUN,
Publications Bureau, Los Angeles Chamber of Commerce.

Studebaker

EVERY AMERICAN CITY should know more about Studebaker Municipal Equipment, which includes Horse-drawn Sprinklers and Flushers, as well as Units that can be mounted on standard makes of Motor Trucks.

We will be glad to send you, upon request, full particulars regarding Studebaker Municipal Equipment.

The Studebaker Corporation of America
South Bend, Indiana

Largest Manufacturers of Vehicles in the World—Established 1852

3123

A Wholesale City Market

Waterbury, Conn.—The Chamber of Commerce has effected the establishment of a successful public market in Waterbury. The market is conducted daily upon a central site leased for the purpose, and is used by approximately one hundred producers to facilitate the transfer of their products to the retailers. Thru this market tons of additional food are shipped directly from the producers to the retailers and indirectly to the public. The city's food supply is thereby increased both in quantity and quality, with an appreciable difference in the cost, the public market producing more competition and lower prices. No retail market was established this year because of the lack of demand for such, it having been found that the people were more concerned in the service afforded by the neighborhood grocery stores.

A committee of the Chamber of Commerce submitted to the Board of Directors a lengthy and detailed report on public markets and the adaptability of the idea to local conditions. The report was referred by the Chamber's Board of Directors to the Board of Aldermen, duplicate copies having been sent to each of the Aldermen. An ordinance establishing a public market and regulating its operation was presented at a regular meeting of the Board of Aldermen. A commission of five citizens was appointed to supervise the market. The commission included two members of the Chamber's committee and the Chamber's Assistant Secretary.

The 1919 season of Waterbury's public market has been a most successful one, and a summary of its benefits was given to the public in the official statement issued by the Federal Marketing Agent for Waterbury.

THOMAS F. MOORE,
Assistant Secretary, Waterbury Chamber of Commerce.

A Thought Survey

Hornell, N. Y.—The popularizing of the Chamber of Commerce in the eyes of the general public was successfully undertaken by the Hornell organization during one week in August when, in connection with the Chamber's display at the County Fair, visitors were requested thru the attractive literature which was widely distributed, to "Give a Thought to Hornell!"

The literature, the maps and the signs about the booth marked it as one of the really alive places at the Fair, and there was no difficulty in attracting a crowd. There was a great deal of favorable comment in regard to the display. Callers were greeted with a placard and the slogan, "Give a Thought to Hornell," and a centrally located box was marked for "Thoughts." Numerous helpful suggestions along the lines of general civic improvement were received.

A thought survey of the Chamber's members had been taken a short time before, and the program of work for the year was written from the members' suggestions. The thoughts gathered at the Fair will be filed for reference, and careful consideration will be given them, but it is interesting to note that the Chamber's comprehensive program embodies practically all the worthwhile suggestions made at the Fair, and that in carrying out the wishes of the membership, those of the general public will also be closely followed.

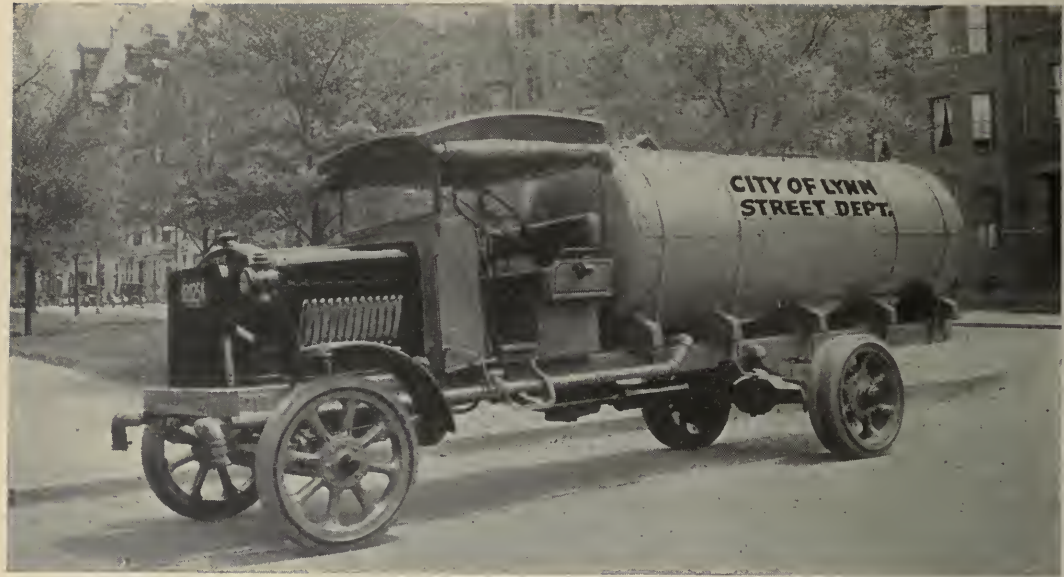
J. J. McKENNA,
Acting Secretary, Hornell Chamber of Commerce.

Bloomington's Organization of Business Women

Bloomington, Ill.—The organization of the Woman's Association of Commerce of Bloomington was perfected in the early part of April of last year, following the organization of the Illinois State Woman's Association of Commerce at the Bloomington Club. Miss Florence King, the president of the national organization, was in Bloomington at that time and assisted in organizing both the state and local associations.

The present membership of the local association is 150. Seven professions and twenty-five or more different lines of business are represented. They range from the owners of wholesale and retail concerns down. The society editors of both daily papers, the owners of three large millinery firms, the heads of departments of several large dry goods firms, principals of schools, etc., are among the members. In fact, almost every business woman of importance in the city holds membership.

The work of the Association is carried on largely thru the finance, conference, publicity and membership committees. The Association has not accomplished as much



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A complete range of sizes gives a model that is right for any need.

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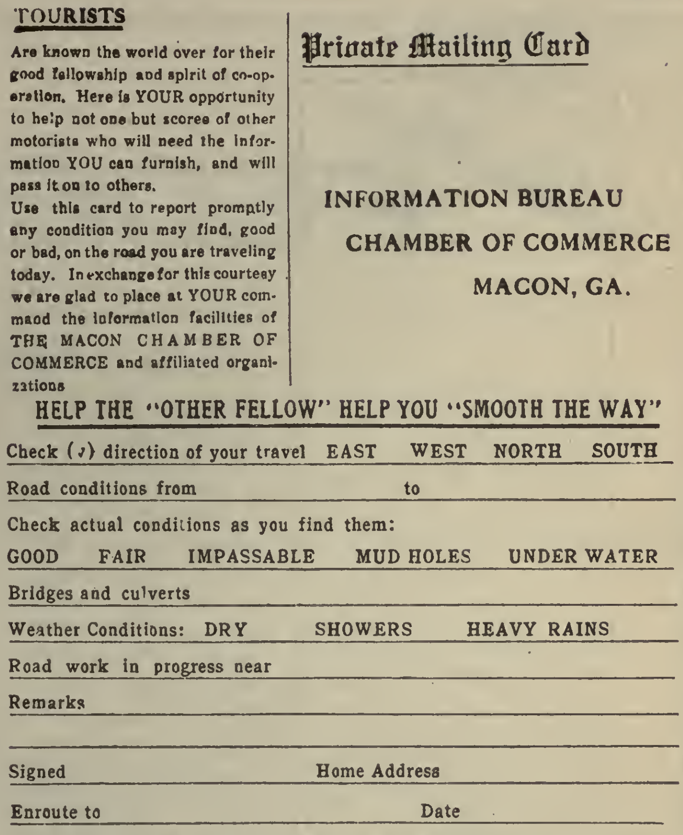
as it expected to in a year's time, which is partially accounted for by the fact that the time of many of the women who would have assisted in its activities was entirely taken up with war work, but it rendered valuable service in connection with the United States Employment Service, besides taking a hand in various community enterprises. A recent accomplishment much appreciated by the members themselves was the establishment of a rest and lounging room in the Association's headquarters.

The Board of Directors meets the second Tuesday in each month for dinner and a business meeting. The regular monthly meetings of the Association are addressed by speakers from local or out-of-town business concerns who talk on subjects of interest to business women.

The local Association holds membership in the National Woman's Association of Commerce, and sent two delegates to the national meeting held this year at St. Louis in July. (MRS.) CORINNE C. JACKSON,

Corresponding Secretary, Woman's Association of Commerce of Bloomington, Ill.



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Check (✓) direction of your travel EAST WEST NORTH SOUTH

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GOOD FAIR IMPASSABLE MUD HOLES UNDER WATER

Bridges and culverts

Weather Conditions: DRY SHOWERS HEAVY RAINS

Road work in progress near

Remarks

Signed Home Address

Enroute to Date

THE TWO SIDES OF A POSTCARD DISTRIBUTED TO TOURISTS BY THE MACON, GA., CHAMBER OF COMMERCE ON WHICH TO RECORD THE CONDITION OF THE ROADS OVER WHICH THEY TRAVEL

New Bulletins

Albany, N. Y.—*Albany Chamber of Commerce Bulletins*, published monthly by the Albany Chamber of Commerce.

Birmingham, Ala.—*Birmingham*, published semimonthly by the Birmingham Chamber of Commerce.

Davenport, Iowa.—*Davenport*, published jointly by the Greater Davenport Committee and Davenport Commercial Club once a month.

East Palestine, Ohio.—*Community Progress*, published monthly by the East Palestine Chamber of Commerce.

Hutchinson, Kans.—*Hutchinson*, published monthly by the Hutchinson Chamber of Commerce.

Niles, Ohio.—*Activities*, published monthly by the Niles Chamber of Commerce.

Sacramento, Cal.—*Weekly News Letter*, issued by the Sacramento Chamber of Commerce.

Tampico, Mex.—*Journal of the American Chamber of Commerce of Tampico*, S. C. L., published monthly.

Texarkana, Ark.—*Texarkana*, the official bulletin of the Texarkana Chamber of Commerce.

Tifton, Ga.—*Tifton Topics*, published monthly by the Tifton Board of Trade.

Washington, Pa.—*Washington*, published monthly by the Washington Board of Trade.

Recently Issued Printed Matter

Dallas, Tex.—"Better Business and Better Citizenship for Dallas" is the title of a report of the Committee on Vocational and Industrial Education and Training of the Dallas Chamber of Commerce and Manufacturers' Association.

Danville, Ill.—A bulletin issued by the Danville Chamber of Commerce takes up the subjects of city planning, lighting, a new armory, paving, roads, the work of the Vermilion County Farm Bureau, etc.

Glens Falls, N. Y.—The Glens Falls Chamber of Commerce has issued an illustrated folder containing information regarding Glens Falls and the work of the local Chamber of Commerce.

Gloversville, N. Y.—The Gloversville Chamber of Commerce has issued a leaflet entitled "Gloversville Holds $200 For You," describing Gloversville and explaining a contest for an appropriate slogan that may be adopted by the city of Gloversville for use in all its publicity. The prize to the winner is $200.

St. Paul, Minn.—The Saint Paul Own Your Own Home Campaign Committee of the Saint Paul Association has made a collection of the most important material used in its campaign and has made it available to any one who may desire to secure copies. The material includes pay envelope inserts, stickers, hand bills describing the prize contest, a lithographed poster, and newspaper advertisements.

San Luis Obispo, Cal.—The San Luis Obispo Chamber of Commerce has published an account of its activities "Before, During and Since the World War" in a bulletin entitled "Results," dated August 28.

Another FEDERAL

One to Five Ton Capacities

Saving $6,075 Each Year With a Federal Flusher

Pictured below is the Ottawa, Canada, flusher, mounted on a 3½ ton Federal Truck. This flusher has a 1,000 gallon tank and auxiliary motor. It operates two-nine hour shifts daily, flushing 18 miles of pavement at an average cost of $1.72 per mile.

Mr. A. F. Macallum, Commissioner of Works at Ottawa, Canada, says that his Federal Flusher is saving the city $6,075.00 each year and is doing the work formerly accomplished by ten horse drawn outfits.

This is another instance where Federal's trouble-free dependable service under constant, heavy usage has spelled economy and increased efficiency to its user.

For a haulage unit of honest, dependable, economical service, use a Federal!

Ask us more about this model.

"Traffic News" mailed monthly on request—free of charge.

Federal Motor Truck Company
34 Federal Street Detroit, Mich.

3½ ton Federal Flusher, operated by the city of Ottawa, Canada.

"Return Loads Will Cut Your Haulage Costs"

Changes Among the Secretaries

A list of the recent changes and new appointments occurring among the secretaries of commercial and civic organizations thruout the United States.

Readers are asked to notify the Editors of such changes as soon as they occur, in order that the list may be made as complete as possible each month.

T. T. ALLISON, of the Charlotte Consolidated Construction Company, has been elected business manager of the Charlotte, N. C., Chamber of Commerce.

T. J. APPLEYARD has resigned as secretary of the Newark, Ohio, Chamber of Commerce. He is succeeded by E. D. Leach, of Cleveland, Ohio.

H. B. BRANCH, former secretary of the Wilmington, N. C., Chamber of Commerce, has been elected secretary of the Chamber of Commerce at Chester, S. C.

T. E. CASSIDY, of Sandusky, has been elected secretary of the Kenton, Ohio, Chamber of Commerce, succeeding Mandel Sener.

M. A. CLAPPER has been chosen as the secretary of the Chamber of Commerce at Hartford City, Ind.

J. MASON DOUGLAS has been selected as secretary-manager of the Chamber of Commerce of Russellville, Ala.

FLOYD DUNHAM has tendered his resignation as secretary of the Commercial Association at Macomb, Ill., to accept a position with the Oliver Chilled Steel Plow Works at Moline, Ill.

JOHN C. FOWLER, formerly secretary of the Chamber of Commerce at Pittsburg, Kans., has been elected secretary of the DeRidder, La., Chamber of Commerce.

JAMES E. GHEEN has resigned the secretaryship of the Bethlehem, Pa., Chamber of Commerce, and has become associated with the Chicago office of the American City Bureau. He is succeeded at Bethlehem by A. H. Buck, lately connected with the Bethlehem Steel Company.

ALLAN T. GORDON is the new secretary of the Chamber of Commerce at Danville, Ill., succeeding P. L. Wills. He was formerly pastor of the Christian Church of Paris, Ill.

A. P. GREGORY has been appointed as the new secretary of the Chamber of Commerce at Guthrie, Okla. George McGregor, whose name was mentioned in last month's issue as having been elected to this position, has just resigned the secretaryship at Guthrie.

H. V. D. KING has resigned the secretaryship of the Chamber of Commerce at Fayetteville, N. C., to accept the secretaryship of the Goshen, Ind., Chamber of Commerce.

SAMUEL T. LEE is the new secretary of the Yankton, S. Dak., Commercial Association.

W. C. LONG, JR., has resigned the secretaryship of the Board of City Development at Plainview, Tex., to accept a similar position with the Chamber of Commerce at Dublin, Tex.

W. A. MCELROY has resigned the secretaryship of the Young Men's Business League of Houston, Tex., to become associated with the Southern Motors Company.

A. D. MACMILLAN has resigned the secretaryship of the Reading, Pa., Chamber of Commerce, and has joined the field staff of the American City Bureau.

A. B. MEEHAN has been appointed secretary of the Farrell, Pa., Commercial Club, succeeding T. R. Woolridge.

C. M. MURRAY, of Jackson, Tenn., has been elected secretary of the Chamber of Commerce at Vernon, Tex., succeeding J. D. Parnell, who resigned to engage in the oil business.

JOHN T. NIELSON has tendered his resignation as secretary of the Dayton, Ohio, Chamber of Commerce, to take effect December 1, when he will assume the secretaryship of the Master Tire & Rubber Company, of Dayton.

WILLIAM R. POUDER has resigned as city manager of Kingsport, Tenn., to accept the secretaryship of the Board of Commerce of Knoxville, Tenn.

J. S. F. RUTHRAUFF has been elected secretary of the Chamber of Commerce at Philipsburg, Pa., succeeding Henry T. Farr.

WILLIAM J. STERN has resigned the secretaryship of the Erie, Pa., Board of Commerce. He is succeeded by George W. Hunter.

WALTER K. SUMNER has resigned the secretaryship of the Auburn, N. Y., Chamber of Commerce, to take effect October 1. He is succeeded by John M. Shetland.

H. M. VAN AUKEN is the new secretary of the Chamber of Commerce at Mason City, Ia., succeeding Clarence A. Bolton.

E. B. WALKER has been elected manager of the Chamber of Commerce at Spartanburg, S. C. Mr. Walker was formerly associated with the Chamber of Commerce at Charleston, S. C.

C. CYRUS WALL has resigned as secretary-manager of the Frankfort, Ky., Chamber of Commerce.

EUGENE F. WEISER has resigned the secretaryship of the Chamber of Commerce at York, Pa.

JOHN E. WHITE has been chosen as the new secretary of the Chamber of Commerce of Anderson, S. C.

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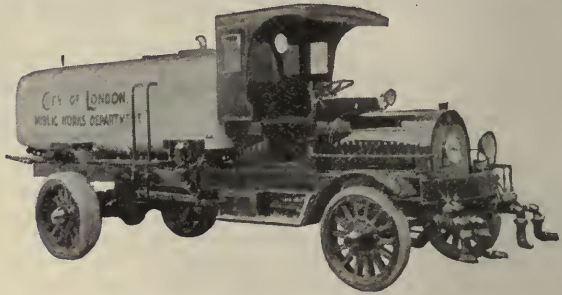
No city can afford to *gamble* on street cleaning apparatus.

There is no need to, because Tiffin Street Flushers have demonstrated their superior efficiency in leading cities of both United States and Canada.



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MAKERS, ALSO, OF TIFFIN DUMP WAGONS, CARTS, ETC.

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IF half the street and road building employees idled, while the other half tried to do all the work, the result would be like that of using rear drive trucks instead of F-W-D. The rear drive truck has to carry nearly all the load on the rear axle. In the F-W-D both load and power are equalized on all four wheels. The whole truck works. Write for details.

The Four Wheel Drive Auto Co., Dept. 106, Clintonville, Wis.
Canadian Factory: Kitchener, Ont.

Recipe for a City Manager Report

By Harrison G. Otis

Editorial Note.—*As Secretary of the City Managers' Association, Harrison G. Otis has made a careful study of the important problem of publishing annual reports. As a result of this study, he has drafted the following "recipe," which, while addressed primarily to city managers, contains wholesome suggestions for all public officials called upon to issue reports for popular consumption. Among the more interesting annual reports recently received from city managers are those from Kalamazoo and Jackson, Mich., East Cleveland and Dayton, Ohio, Wichita, Kans., and San José, Calif.*

The preparation of an annual report gives to the city manager his one big opportunity to play host to his taxpayers. The fact that the charter usually requires such a report and that the city foots the bill simply increases the obligation resting upon the manager. The report should be a real feast,—a Thanksgiving dinner, if you will,—so full of fresh, wholesome ideas and food for thought that strangers will devour it from cover to cover.

The citizens will prize more highly the annual report if they have been frequently called upon to help produce the achievements therein chronicled.

A real feast must be carefully planned long in advance. So, too, the annual report. Each week should yield some definite contribution of increased or added service. The field of community welfare should be cultivated to produce a rotation of crops. These crops may be gathered by securing monthly reports from department heads. To each such report should be added suggestions whereby the department's efficiency may be increased. Thus the next crop is planted.

A camera is a handy harvesting tool for gathering "before-and-afters."

As the end of the year draws near, assemble the stores of facts and select the finest specimens of accomplishment. Sort well and plan the meal.

Warnings. (1) Many a good manager is a poor publicity man; better call in the local newspaper writer and make him your chef rather than spoil an excellent meal by poor cooking. (2) "Too many cooks spoil the broth"; your department heads may not have been selected for their literary ability.

Rcmove "I's" and Boil Down

Having picked out the best stories, *boil them down,* after carefully removing the "I's." Season with comparisons. Unrelated facts are often insipid and hard to digest. These comparisons may be in figures, lines, circles, sketches or photographs. Apply them with judgment and remove any trace of bitterness. Use only the quantity needed to bring out the true value of the accomplishments. Stir in a bit of human interest to keep the pot from boiling dry.

Now prepare the financial statements. If these come to you already cooked from the auditor's delicatessen shop, be sure to inspect them carefully. Finances are a necessary but dangerous part of a report and of little value without proper comparisons. Most tables of statistics will stand condensing. Long inventories of bolts and nuts contain little nourishment.

In assembling the courses, three things must be borne in mind: (1) It is a report to the people and worthless unless read, hence it must be *readable.* (2) It is for the people, hence copies must be delivered to all the taxpayers, or at least to all the holders of realty. (3) It is to be paid for by the people, hence don't be extravagant by insisting upon embossed covers and thick volumes.

Now set your table. Reports must be attractively set up. Your public is not so hungry for municipal information that it will dig ravenously into cold hash served in uninviting packages over the clerk's counter. Select good paper, good type, good illustrations. Arrange the courses in logical sequence. You are selling good government. Your report should qualify as a "best seller" except that it must be quite free from "fiction."

Assuming that the stories of achievement are ready to be taken up, prepare them for the report by cutting into short paragraphs set off by spicy subheads in bold-faced type. Each heading should state an interesting fact and not simply label a part of an exhibit.

From these headings select the most toothsome bits as the ingredients of an "appetizer." This may appear as a part of the manager's letter of transmittal or serve as a "foreword" to the report.

If properly prepared and served, the report will find a most enthusiastic welcome and Mr. Taxpayer will smack his lips and pass up his plate for more good government. Perhaps he will even pay his tax bill with pleasure.

For dessert, set forth plans for proposed service and improvements for the coming year, not in full detail but in light outline, so as to leave your guests in a mood of good fellowship and anticipation.

Don't be alarmed at the occasional groan of the chronic curbstone dyspeptic. It is reward enough to see the citizens as a whole smoking the pipe of political peace and planning for another year of united community service.

The Road to Better Roads

The Rumely OilPull tractor is the choice of a steadily increasing number of road men, because they have thoroughly investigated the tractor field and know that the OilPull possesses to the highest degree:—

Power Ample power to pull the load easily and a big reserve to call on in the "pinches"—that's OilPull power. The OilPull rating is based upon only 80% of its maximum power efficiency—a 20% reserve when you need it.

Durability The OilPull is built complete in Advance-Rumely factories—and no better materials or workmanship can be put into a tractor. The whole design and construction is to "stand the gaff" and deliver dependable cheap service, season after season. The OilPull has been on the market for ten years—it was a pioneer tractor. Today the first OilPulls are still on the job. Over 15,000 are now in service.

Economy Any OilPull will build a mile of road at a lower fuel cost than any tractor of equal rating—whether gasoline, kerosene or so-called combustion gasoline—kerosene. We don't make idle promises as to the ability of the OilPull to handle low cost fuel. We guarantee it, in writing, to burn all grades of kerosene under all conditions at all loads, to its full rated brake horsepower.

Service Back of every OilPull stands the Advance-Rumely Service organization—27 branch offices and warehouses, each with a complete stock of machines and parts, and an organization of trained tractor experts.

The OilPull is built in four sizes—12-20, 16-30, 20-40 and 30-60 H. P. The OilPull catalog gives the complete story. Ask for it.

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Municipal and Civic Publications

See also Department of News and Ideas for Commercial and Civic Organizations

Town Improvement.

Frederick Noble Evans, M. L. A.. D. Appleton & Co., New York. 1919. xvi + 260 pp. Illustrated.

Professor Evans has set forth in this volume an outline of every-day methods for the improvement of our "Home Town." It is not really a book on city planning, but may be considered an introduction thereto. It discusses the forces that create towns, town planning in general, the various types of street systems, the problems of traffic circulation, the relation of the railroad to the town, the importance of attractive entrances and sightly water-fronts, and the great need for the systematic creation of parks and park systems before the cost in growing towns becomes prohibitive. Considerable attention is also given to schools, school grounds and gardens, playgrounds and neighborhood centers, and to the problems of water-supply, sewage disposal and kindred questions of health and sanitation. Billboards and unsightly overhead wiring, inadequate monuments, business building architecture and civic centers are covered under the broad heading "Civic Art." Two most interesting chapters treat of the beautification of streets and residential districts by proper planning and planting. The last two chapters are essentially practical in their discussion of methods of paying for town improvement and the need of an organization to plan and carry out the work.

Professor Evans's book presents in compact form a great deal of valuable material which will both teach and inspire.

New Town: A Proposal in Agricultural, Industrial, Educational, Civic and Social Reconstruction.

W. R. Hughes, Editor for the New Town Council. J. M. Dent & Sons, Ltd., London and Toronto. 1919. 141 pp.

This little book has a twofold purpose—to promote thought and study and to enlist support for the practical proposals made. The first steps towards the founding of an ideal New Town in England have already been taken. The book tells the story of the proposal as it affects the land problem, the planning and building of New Town, its projected industrial development, with parent and subsidiary companies, handicraft shops as opposed to intense specialization in industry, distribution of profits, standards of production, and the central store. It discusses the allotment gardens, the proposed Farming Company, which will provide milk, fruit and meat, and the untold possibilities of coöperative enterprise in agriculture. The chapter on Education points out the inadequacy of stock methods and the desirability of harmonizing the educational work with life in the town and with the future vocations of the children. Carefully thought-out plans for convenience and ease in housekeeping mark the chapter on Homes and Social Life, and cause one to ponder upon the needless drudgery with which we have surrounded our homes. All in all, "New Town" is worth the careful study of any person who desires to keep informed of the trend of thought along town planning lines.

Report of the United States Housing Corporation, Volume II.

Bureau of Industrial Housing and Transportation, U. S. Department of Labor. 1919. 524 + xix quarto pages.

A valuable addition to the literature on the subject of industrial housing is the Report of the U. S. Housing Corporation, Volume II, which sets forth the activities of the architectural, town planning and engineering divisions. This volume has been issued in advance of Volume I, which will be devoted to the work of the remaining divisions, because the work of these three divisions is practically completed. The present volume first tells how the U. S. Housing Corporation attacked the serious war-time problem of housing shortage, investigating situations and determining upon remedies; secondly, states the general principles which guided the work of the Corporation in designing and planning houses, surface improvements and public utilities; and then presents detailed descriptions, profusely illustrated by drawings and photographs, of 47 of the most important housing projects. Tables of cost data, an appendix of printed instructions, and a bibliography complete this comprehensive report.

The Housing of the Unskilled Wage Earner: America's Next Problem.

Edith Elmer Wood. Macmillan Company, New York. 1919. 321 pp.

This valuable and timely book gives a brief historical survey of early housing reports, and traces the development of restrictive housing legislation, of the so-called "model tenements" of the larger cities, of limited dividend enterprises, and of numerous examples of industrial housing. Pointing out the need for correcting intolerable conditions and the trend from multiple dwellings to single-family houses in garden suburbs, the author emphasizes the futility of depending upon philanthropy or company housing for such new homes, and the outstanding fact that "restrictive housing laws, energetically enforced, ameliorate bad conditions but cannot cure them." She examines the experiences of numerous foreign countries in government aid, including state and municipal housing, loans to individuals, and tax exemptions. Constructive housing legislation in the United States is discussed, from its inception to the war-time housing of the Federal Government. A whole chapter is devoted to an analysis of objections to constructive housing legislation, and another to outlining a comprehensive housing policy for the United States, which includes (1) continued restrictive housing legislation to maintain minimum standards, and (2) constructive legislation, national, state and local. It is a book which cannot fail to be helpful to every person who is concerned with the solution of "America's next great problem."

A Course in Citizenship and Patriotism.

Ella Lyman Cabot, Fannie Fern Andrews, Fanny E. Coe, Mabel Hill and Mary McSkimmon. Houghton Mifflin Company, Boston, Mass. Second edition. 1918. xxii + 386 pp.

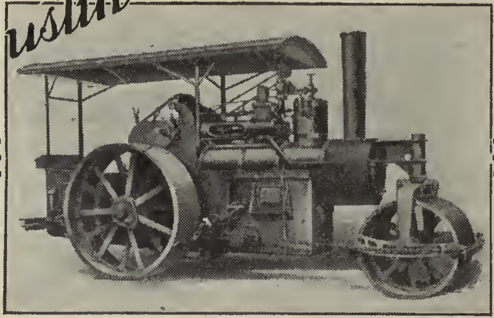
A collection, arranged by grades, of stories, poems, suggestions for morning talks, lists of books and references for both pupil and teacher, and practical suggestions for translating feelings of kindness and patriotism into terms of action. The course of study begins, in the first three grades, with the simple problems of home, school and community; going on in the middle grades to first civic, and then national, problems; and developing, in the seventh and eighth grades, some conception of the United States in its relation to the "world family."

One Hundred Reasons Why One Hundred Cities Have Changed from Private to Municipal Ownership of Their Public Utilities.

Burns & McDonnell, Consulting Engineers, Kansas City, Mo. 1919. 16 pp.

After a twenty years' experience in appraising water, lighting, gas, heating, sewer, telephone and street railway utilities for more than one hundred cities, the authors of this booklet base their arguments for municipal ownership upon the opinions expressed by city officials and their own observations of actual results obtained by cities after acquiring these public utilities. Municipal officials will find in these "One Hundred Reasons" a strong presentation of the affirmative side of the case.

Austin



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Austin Motor Road Rollers—established for ten years and sold in ever-increasing numbers in all parts of the world; operate on either gasoline or kerosene. Austin motor rollers are built in tandem and macadam styles and in sizes to suit every paving and road building requirement.

Austin Pressure Scarifier Attachment—the most convenient and practical of its kind. It can be used in connection with any Austin Roller, steam or motor, of 10-ton size or over.

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JAW ROCK CRUSHERS
STREET SPRINKLERS
STREET SWEEPERS
ROAD SCARIFIERS
GRADING PLOWS

The Management of a City School.

ARTHUR C. PERRY, JR., Ph. D. The Macmillan Company, New York. Second edition, revised. 1919. viii + 431 pp.

A discussion of the specific problems confronting the principal of a city school, considering his relations with the public, school authorities, teachers, school equipment, and with the physical, mental and moral development of his pupils. Written from the broad viewpoint of a District Superintendent of Schools of New York City, the book gives a thoro consideration of all these topics, and offers a large number of practical solutions.

Employment Psychology: The Application of Scientific Methods to the Selection, Training and Grading of Employes.

HENRY C. LINK, Ph. D. The Macmillan Company, New York. 1919. xii + 440 pp.

Commercial Policy in War Time and After: A Study of the Application of Democratic Ideas to International Commercial Relations.

WILLIAM SMITH CULBERTSON. D. Appleton & Company, New York. 1919. xxiv + 479 pp.

The Place of Agriculture in Reconstruction: A Study of National Programs of Land Settlement.

JAMES B. MORMAN, A. M. E. P. Dutton & Co., New York. 1919. ix + 374 pp.

American Business in World Markets.

JAMES T. M. MOORE. George H. Doran Company, New York. 1919. xi + 320 pp.

British Labor and the War: Reconstructors for a New World.

PAUL U. KELLOGG and ARTHUR GLEASON. Boni & Liveright, New York. 1919. viii + 504 pp.

Industrial Goodwill.

JOHN R. COMMONS, University of Wisconsin. McGraw-Hill Book Company, Inc., New York. 1919. 213 pp.

A National Program of Health Education.

A forceful argument for a national program of health education and an outline of the most essential details of such a program, as presented in a 1918 address before the National Council of Education by Thomas D. Wood, M. D., Chairman of the Committee on Health Problems, is now available in a pamphlet entitled "War's Emphasis on Health Education." 14 pp. (Apply to Thomas D. Wood, M. D., Teachers College, Columbia University, New York.)

Report of Bronx Parkway Commission.

This report tells the story of the reclamation of the polluted Bronx River and of the acquisition and improvement of the Bronx Parkway Reservation. The booklet is attractively illustrated by a number of photographs of alluring bits of scenery and of "before and after" views of the park and vicinity. Report for the year, ending December 31, 1918. 87 pp. (Apply to Jay Downer, Engineer and Secretary, Bronx Parkway, 280 Madison Ave., New York.)

Mental Defect in a Rural County.

The results of a medico-psychological and social study of mentally defective children in Sussex County, Delaware. undertaken by the U. S. Public Health Service in collaboration with the Children's Bureau for the purpose of ascertaining the prevalence of mental defect in a rural population, of analyzing the social conditions that surround mentally defective children, and of discovering the extent of the need for public provision for their care. 1919. 96 pp. (Apply to Julia C. Lathrop, Chief, Children's Bureau, U. S. Department of Labor, Washington, D. C.)

Municipal Reform in Philadelphia.

Frederick P. Gruenberg, Director of the Philadelphia Bureau of Municipal Research, informs us that he has no copies of the above pamphlet for distribution, as stated in the September issue of THE AMERICAN CITY. Copies can be obtained by writing to Senator Bois Penrose, Commercial Trust Building, Philadelphia, Pa.

Report of the Ontario Housing Committee.

This is a most comprehensive report discussing Ontario's housing needs, and including standards for inexpensive houses approved for Ontario and a large number of drawings of typical plans. 187 pages + 35 attached pages of architects' drawings. 1919. (Apply to J. S. Willison, Chairman of the Committee, Toronto, Ont.)

Museums and Industries.

A museum of service has been gradually growing during the last ten years in Newark, N. J. Besides the usual collections of paintings and other objects of art, the Newark Museum, which is housed in the Public Library, contains science collections, educational material for teachers, collections of industrial products and industrial exhibits. The story of the growth of this museum and of the ideas in accordance with which it has been managed, told by John Cotton Dana, Librarian and Director of the Museum Association of Newark, is now available in pamphlet form for circulation. 1919. 23 pp. (Address the Newark Museum Association, Newark, N. J.)

Charter Provisions for the City Plan Commission.

Another publication of the City Plan Commission of Detroit (April, 1919). 4 pp.

Pocket Directory of the American Press.

A complete guide of publications in the United States, Canada, Cuba, Porto Rico, Hawaiian Islands and Philippine Islands, including also lists of populations of all cities, states and territories. 1919. 817 pp. (Apply to Lord & Thomas, New York.)

Newspaper and Magazine Directory.

A pocket-size directory containing detailed information regarding the papers and periodicals of this country, Canada, etc., and a quick reference table giving circulations, rates and form-closing dates of a large number of weekly and monthly publications. 1919. 705 pp. (Published by H. W. Kastor & Sons Advertising Company, Chicago, Ill.)

Annual Convention of the Union of Alberta Municipalities.

Report of the proceedings of the convention held October 9-10, 1918, at Medicine Hat, Alberta. Among the subjects discussed were: Municipal Assessments and Taxation in Alberta, Provincial Industrial Research, Increasing the School Grant, Town Planning, Uniformity of Records and Returns, and Health in Its Relation to Municipal Effort. 105 pp. (Apply to J. D. Saunders, Secretary-Treasurer, Camrose, Alberta, Canada.)

The Housing Problem.

The author of this booklet criticizes Councilor E. J. Smith's scheme of housing reform for Bradford, England, on the grounds that it is extravagant, that it tends to stifle private enterprise, that public service is usually less efficient than private enterprise, and that Mr. Smith's statements concerning wretched housing conditions in Bradford and their evil effects are greatly exaggerated. An alternative plan to stimulate building is proposed by the author. 1918. 48 pp. (Address Percy Lund, Humphries & Company, Ltd, 3 Amen Corner, London, E. C. 4.)

Better Country Schools for Missouri.

In order that the people of Missouri may be aroused to action in the matter of Missouri's rural schools, a live little booklet has been prepared and issued by the State Department of Public Schools in coöperation with the International Harvester Company. Charts and photographs present the facts in a striking manner. 1919. 52 pp. (Apply to P. G. Holden, Director, International Harvester Company, Harvester Building, Chicago, Ill.)

Fair Average Prices.

"Fair Average Prices in Cost of Reproduction and the Trend of Prices After the War" is the title of an address by Morris Knowles, delivered before the New Jersey Utilities Association on May 31, 1919, and now appearing in pamphlet form. Graphs showing price fluctuations form the basis of Mr. Knowles' statement that "the probable average prices during the construction period of a property requiring five years to complete, commencing to-day, will be between 165 and 170 per cent of 1914 prices." (Apply to Morris Knowles, Inc., Pittsburgh, Pa.)

Curfew.

The texts of curfew ordinances in a number of the cities of the United States are given in the August, 1919, issue of the St. Louis Public Library Monthly Bulletin. 34 pp. (Apply to the Municipal Reference Library, 211 City Hall, St. Louis, Mo.)

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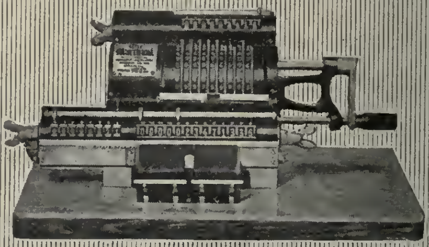

Municipal Gas Plants in America and Europe.

This 122-page book discusses public ownership and its influence upon the general welfare, and makes a special study of gas works in American and European cities under both public and private ownership, comparing the two types of control with regard to efficiency, costs, and rates of charge. 1918. (Issued by the Public Ownership League of America, Unity Building, Chicago, Ill.)

Proceedings Americanization Conference.

A 410-page book issued by the Bureau of Education, Department of the Interior, prints in full the proceedings of the conference held May 12-15, 1919, at Washington under the auspices of the Americanization Division, Bureau of Education. Among the many noteworthy papers presented at the conference were an address by Dr. P. P. Claxton, U. S. Commissioner of Education, on "Education in Americanization," and papers on Americanization Methods in Industry, The Best Technical Methods of Teaching English, The Part of Naturalization in Americanization, Securing the Interest and Coöperation of the Foreign Press, The Use of Periodicals in Training Future Citizens, Community Gatherings and Recreation, An Intensive Community Organization Experiment, Improving Housing and Sanitation Conditions of the Foreign Born, and Best Fields for Service of Various Local Agencies. (Write to Superintendent of Documents, Government Printing Office, Washington, D. C.)

Children's Institutions Department, Boston.

Year ending January 31, 1919. 61 pp. (Write to Children's Institutions Department, 49 City Hall, Boston, Mass.)

The Needs of Probation in New York City.

A plea, with arguments, for an increased staff and readjustment of the salary schedule of probation officers in New York City. September 1, 1919. 12 pp. (Apply to Edwin J. Cooley, Chief Probation Officer, New York City.)

Community Centers and Elementary Night Schools in Cincinnati.

The annual report of the Department of Community Centers and Night Schools for the school year 1918-19 is devoted almost entirely to the newer feature—the community center work. Besides giving an account of last year's activities, which included the offering of club facilities, neighborhood entertainments, social evenings, dances, community singing, reading rooms and game rooms, the report considers the problems of training community organizers, equipping school buildings for use as community centers, and general needs and plans for the coming year. 24 pp. (Apply to Frank P. Goodwin, Director.)

The Cost of Government of the City of Detroit, 1919-1920.

Detroit's budget for 1919-1920 is presented in the July 1, 1919, issue of *Public Business*, a bi-weekly publication of the Detroit Bureau of Governmental Research, Inc. Tables and charts make it clear to the ordinary citizen just how each dollar of tax money is to be expended. 20 pp.

Social Hygiene in South Carolina.

Quarterly bulletin of the State Board of Charities and Corrections, issued March, 1919. The following topics are discussed: The Menace of Prostitution, A Study of Fifty Delinquent Girls, A Summary of 481 Case Records of Delinquents, Institutions for Women in Danger, Inspections of Institutions, and Venereal Disease Control in South Carolina.

New York State Tax Conference.

A report of the proceedings of the Eighth State Conference on Taxation held at Albany on January 22-24, 1919, including addresses and discussions on "Our Fiscal Difficulties and the Way Out" (opening address by Edwin R. A. Seligman), "The Costs and Needs of Government," "Costs and Needs of the Government of the City of New York," "A Model Tax System," and other timely topics. 381 pp. (Issued August, 1919, by the State Tax Department at the Capitol, Albany, N. Y.)

Lessons on American Citizenship.

A textbook for men and women preparing for naturalization, summing up briefly the functions of the local government (Cleveland), the state government (Ohio), and the national government, the Constitution of the United States and of the state of Ohio, the steps necessary in naturalization, and the rights and duties of citizens; and including other information of interest and value to new citizens. 1919. 65 pp., illustrated. (Apply to the Division of Educational Extension, Board of Education, Cleveland, Ohio.)

County Road Legislation.

An appendix to the annual report of the Ontario Department of Public Highways, including the Highway Improvement Act and provisions of the Ontario Highways Act relating to county roads. 1919. 25 pp. (Apply to W. A. McLean, Deputy Minister of Highways, Parliament Buildings, Toronto, Ont.)

A State Endorses the Rural Motor Express.

A report of the Committee on Food Production and Distribution of the New York State Reconstruction Commission endorses the rural motor express, summarizes its advantages and recommends that a committee be formed to extend it thruout the State of New York. 1919. 8 pp. (Write to F. W. Fenn, Secretary, Motor Truck Committee, National Automobile Chamber of Commerce, Inc., 7 East 42d Street, New York.)

Department of Health, Buffalo, N. Y.

1918. 131 pp. (Apply to Francis E. Fronczak, Health Commissioner.)

Harbor District No. 3 for Chicago.

An ordinance recommended by the Committee on Railway Terminals and passed by the City Council of Chicago on July 21, 1919, provides for the establishment of Harbor District No. 3; the construction by the Illinois Central R. R. Company of a new passenger station; electrification of certain of the railroad lines within the city; and the development of the lake front. 111 pp. 8 attached drawings. (Copies of the ordinance can be procured on application to James T. Igoe, City Clerk.)

Venereal Disease Ordinances.

A compilation of suggested and adjudicated ordinances which have proved successful in combating venereal diseases. 1919. 36 pp. (Write U. S. Public Health Service, Washington, D. C., for V. D. Bulletin No. 39.)

Opportunities for Women in the Municipal Civil Service of New York City.

This report is the result of a comprehensive investigation, made for the Intercollegiate Bureau of Occupations and the Women's Auxiliary of the Civil Service Reform Association of New York, of the civil service positions open to women in New York City,—the number of women employed, their duties, qualifications, compensation and length of service. 1918. 94 pp. (Published by the Intercollegiate Bureau of Occupations, 19 West 44th Street, New York City.)

Some Market Problems.

This article is a reprint of an address by Dr. Eugene H. Porter before the New York State Agricultural Society at Albany on January 14, 1919, setting forth what the Division of Foods and Markets has done and is planning to do for New York State, and including a critical discussion of farmers' markets. 11 pp. (Write to Dr. Eugene H. Porter, Commissioner of Foods and Markets, Albany, N. Y.

Proposed Amendments of England's Housing and Town Planning Act of 1909.

This 16-page pamphlet contains the papers read at the April, 1919, meeting of the Town Planning Institute of London, with the discussion thereon at that meeting. The two main policies advocated and discussed were: a group of proposals demanding the simplification of town planning procedure, with modification of some of the legal requirements; and the proposal that the preparation of planning schemes be made obligatory on local authorities. (Published by the Town Planning Institute, 4 Arundel Street, London, W. C.)

Twelfth Street—St. Louis' Most Needed Commercial Thorofare.

A report on the development of Twelfth Street, St. Louis, prepared by Harland Bartholomew, Engineer, in conjunction with the City Plan Commission of St. Louis, and submitted to the Board of Public Service May 1, 1919. 15 pp. (Apply to Harland Bartholomew, City Engineer.)

An Outline for a Birth-Registration Test.

For the use of organizations desiring to conduct a house-to-house investigation of birth registration, an outline of procedure has been prepared and issued by the Children's Bureau. 1919. 13 pp. (Apply to Children's Bureau, U. S. Department of Labor, Washington, D. C.)

Commissioners of the Palisades Interstate Park.

Annual report, presented to the Legislature of the State of New York January 31, 1919. 41 pp., with attached map of the park. (Apply to J. DuPratt White, Secretary, Commissioners of the Palisades Interstate Park, Albany, N. Y.)

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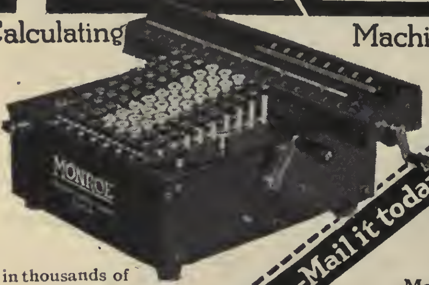

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City and County officials all over the country find that Watson Wagons are the best—the most durable—and the most economical in the end—for hauling garbage, ashes and refuse and for service in connection with all kinds of construction and road maintenance work. One of the many features of a Watson is the non-sagging bottoms—bottoms that over-lap and "stay-tight."

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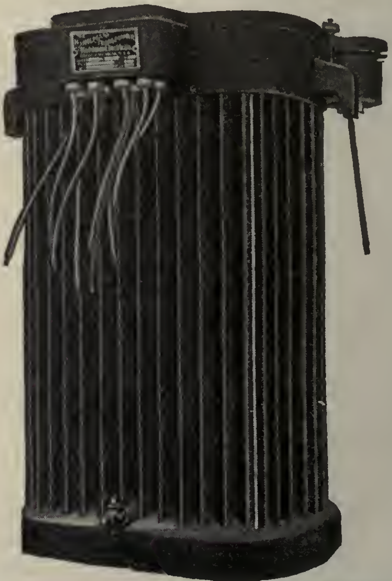

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BAY CITY, MICH.

What Maine Has Done and Hopes to Do for Improved Highways.

A pamphlet compiled by the State Highway Commission of Maine, containing a large map of Maine's improved and unimproved state highways, tables of statistics, a general statement of results already accomplished, and a discussion of the need for the proposed road bond issue amendment now before the Legislature. 1919. 16 pp. (Apply to the State Highway Commission, Augusta, Me.)

Why Teach or Learn the German Language?

An argument presented by Lawrence A. Wilkins, in charge of modern languages in the high schools of New York City, for the substitution of the study of the French, Spanish and Italian languages for the study of German. 1919. (Write to Putnams, 2 West 45th Street, New York.)

Akron and Its Planning Law.

A study by Frank Backus Williams, of the New York Bar, of the legal powers of the city authorities of Akron with regard to the establishment of a city plan, in such matters as the acquisition of land for public use, the relocation of public and semi-public buildings, building regulation and zoning, and city planning finance. 1919. 40 pp. (Published by the Akron Chamber of Commerce.)

References on War Memorials.

An annotated list of references on war memorials, arranged under the following heads: General Works, Monuments—Sculpture, Community Houses, Trees, and Miscellaneous. A large number of references to The American City are noted in this list, especially under the third head, "Community Houses." (Prepared and issued by The New York Public Library, 476 Fifth Avenue, New York.)

Excess Condemnation.

A collection of facts in support of a proposed amendment to the state constitution providing for the condemnation of more land and property than is needed for the acquiring, opening and widening of parks, boulevards, public places, streets and alleys by municipalities within and beyond their boundaries. 8 pp. (Published March, 1919, by the City Plan Commission, Detroit, Mich.)

Public Ownership of the Street Car Lines of Chicago.

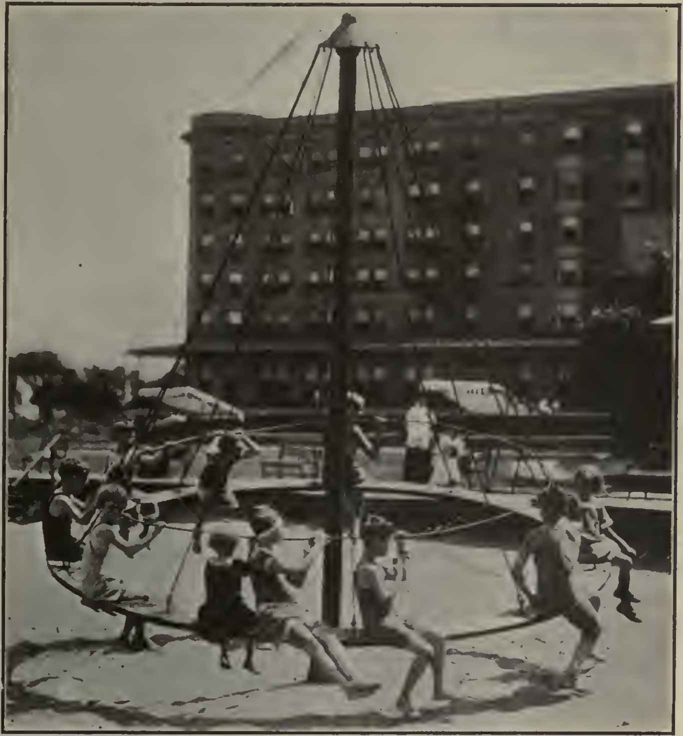
A constructive program adopted by the Chicago Municipal Ownership League and submitted to the City Council and the people of Chicago. 16 pp. (Issued April, 1919, by the Chicago Municipal Ownership League, 1439 Unity Building, 127 N. Dearborn Street, Chicago.)

Methods, Materials and Appliances

News for Boards of Public Works, Engineers, Contractors, Purchasing Agents, and Others Interested in the Economical Construction and Efficient Operation of Public Improvement Undertakings

Proper Apparatus Makes Better Playgrounds

To bring joy to the hearts of the children using your playgrounds, you would most naturally install apparatus which will provide plenty of healthful, exhilarating play without any element of danger. The "ocean wave" made by the Hill Standard Manufacturing Company, 216 Fun-Ful Avenue, Anderson, Ind., well fulfills these specifications. The motion is a rotating and undulating movement combined. Children of all ages are very enthusiastic about it. The device will carry twenty children safely and can be propelled readily by one child. When completely assembled and ready for use the circle measures 56 feet in circumference. The same company makes a complete line of swings, ladders, slides and other playground apparatus.



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UNION METAL LAMP STANDARDS

Prevent "Lamp Post" Accidents

Such accidents as the ones here pictured and described are impossible where Union Metal Lamp Standards are used. The post, shaft and head are separate units held together by three steel tie rods and all anchored firmly to the sub-base. This construction coupled with the pressed metal shafts, will resist the most severe shocks and blows which would instantly wreck any other type of standard.

Every cast iron lamp post constitutes a liability for accident, and one damage case might easily cost the city or other owner more than the entire lighting system. Union Metal Standards with the unbreakable pressed metal shaft are the only safe standards for city lighting.

Put Safety First in Your Lighting System

Write for Our Booklet

"Ornamental Street Lighting"

The Union Metal Mfg. Co.
Largest and Oldest Manufacturers of Ornamental Lighting Standards
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Combination Railway and Lighting Poles
Installed on Hopple Street Viaduct
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"ELRECO" Combination Railway and Lighting Poles do double duty—support trolley wires and ornamental lighting fixtures.

NO LAMP STANDARDS REQUIRED.

Write for Illustrated Book on Modern Street Lighting.

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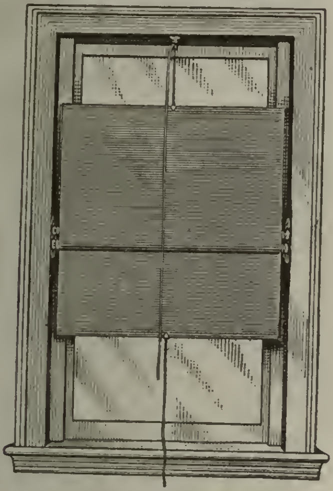
Proper Window Shades for the Schoolroom



A WINDOW SHADE THAT ALLOWS FOR PROPER LIGHT AND VENTILATION

Of the many things that have contributed to the comfort of school children, none has been of more importance than the attention given to the selection of window shades. It was discovered that light, penetrating thru certain colors of shade cloth, caused eye-strain, with its attendant ills of headache and numerous nerve troubles. Chemists of Cleveland, Ohio, made this a subject of study, and worked out a color in the Oswego tinted cambric shade cloth, manufactured by the Oswego Shade Cloth Company, that was adopted by the Board of Education of that city and used in all their schools. This shade cloth is made on a high-grade cambric muslin, with a soft, light green coloring rubbed into the mesh of the cloth, and the effect of the light penetrating thru this cloth is very easy on the pupils' eyes.

Many of the school boards in the larger municipalities have installed window shades as shown in the illustration, in order to have perfect control of light and ventilation. A double bracket, furnished by the Stewart Hartshorn Company, 250 Fifth Avenue, New York City, is placed at the center of the window, and on this are hung two shades, one rolling up and the other down.

Making Water Connections Under Pressure

During August, 1919, the A. P. Smith Manufacturing Company, East Orange, N. J., completed eight 24-inch connections to a 72-inch steel line for the city of Jersey City. All of these connections were made under pressure of from 90 to 100 pounds.

The work consisted of connecting special fittings to a 72-inch steel pipe and the making of 24-inch connections without interfering with the supply. This was exceedingly important, inasmuch as the 72-inch line is the principal source of supply for Jersey City, and had anything happened to this pipe it would have meant that the entire city would have been shut off from water while repairs were being made. The city had contracted to lay a duplicate 72-inch line, and it was the connecting of the two lines which called for the above work. If the work had not been done by the use of the valve connecting machine, it would have

JERSEY CITY WATER-SUPPLY CONNECTIONS, MADE WITHOUT INTERRUPTION OF SERVICE

Westinghouse

Type CI Luxsolite Fixtures

The illustration shows a day and night view of an nstallation of Westinghouse Type CI Luxsolite Fixtures on Federal St., North Side, Pittsburgh.

The fixtures are equipped with 600 C. P., 20 Ampere Mazda C. Lamps. Diffusing globes are used, which with the close spacing of the fixtures, gives a decided "White Way" effect.

Westinghouse Electric & Manufacturing Company

EAST PITTSBURGH, PA.

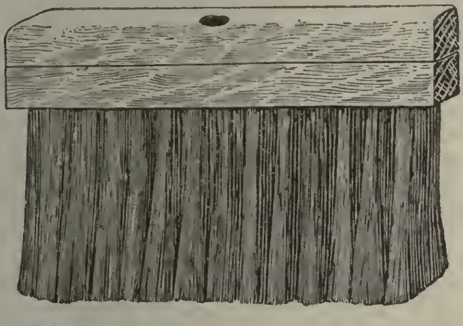
THE BURCH STONE UNLOADER AT WORK

been necessary to do all of it at night, and during such connection the supply to the city would have had to be shut off completely. This would have meant no water in case of a fire, and, besides, would have caused considerable inconvenience thruout the city.

Four of the connections referred to were made on the Passaic River side of the Jersey City supply and four on the Hackensack River side. The illustration on page 399 shows the connections on the Passaic River side.

Tools for Asphalt Work and Street Cleaning

Under the trade name "Iroquois" the Barber Asphalt Paving Company, Philadelphia, Pa., manufactures a very extensive line of asphalt construction machinery and tools. This company's portable heating kettles and surface heaters are well known to street superintendents. The two products here illustrated are the asphalt scraper and the wire push broom. The scraper is especially designed for cleaning streets, bridges and sidewalks, and is being used successfully by a large number of municipalities. This steel scraper measures 30 by 13 inches, and it is claimed that it wears off to a sharp edge and will not curl, as is the case with most scrapers. The heavy, coarse steel wire push broom illustrated herewith is used extensively in paving and road construction, street sweeping and other work in which the broom receives heavy and rough usage. The broom is 14 inches long and the wire about 5 inches.



WIRE PUSH BROOM FOR STREET PAVING AND CLEANING

Unloading Stone by Machine

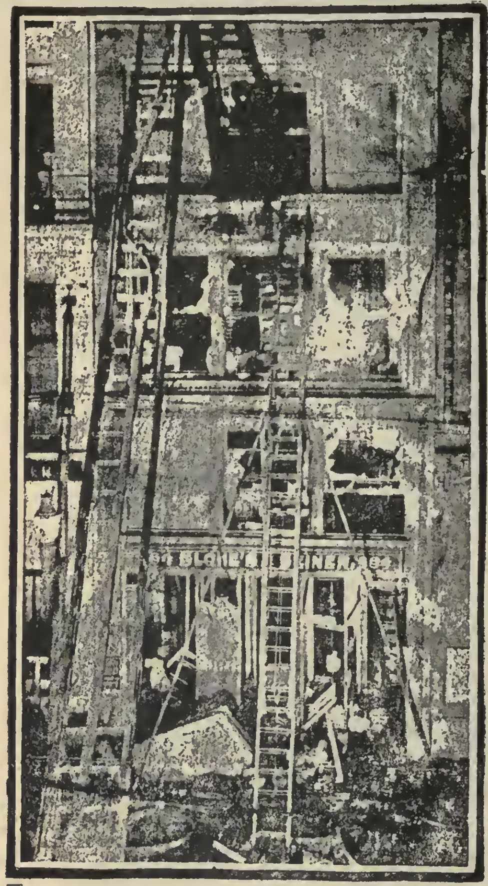
The Burch stone unloader, illustrated herewith, not only dispenses with hand-labor but is found to be a great time-saver. It will handle any size stone used in road-building, and deliver direct from car to truck at the rate of a cubic yard per minute, the driver controlling the entire operation from the truck. The Burch Plow Works Company, Crestline, Ohio, is the manufacturer.

ASPHALT SCRAPER, USED FOR CLEANING PAVEMENTS AND SIDEWALKS

Engineering Firm Prominent in Municipal Work

The Scofield Engineering Company, Philadelphia, Pa., has established an enviable reputation for appraisal work, its reports having been upheld by the courts in numerous cases. Nine appraisal reports have been made for the city of Philadelphia, and in each case the court has practically given award upon the Scofield appraisal. Associated with this company is a prominent bridge engineer, a man who has had over thirty years' practical experience in both bridge design and construction. This firm makes a specialty of municipal electric lighting plants, and has designed several plants which are classed among the most economically operated in the country. Flood protection and highway engineering are also features of its work. Municipal sewage, water-power and water-supply systems and Liberty Buildings are among the other specialties of this company.

FILM FIRE AND EXPLOSION



Wrecked This Building and Killed Ten People

Are you subjecting the lives and property under your care to this hazard?

You must use motion pictures in your community and welfare work, but as theatre film is so highly inflammable and explosive, practically every state in the Union forbids its use unless the machine is enclosed in an approved fireproof booth, large enough to contain both machine and operator. It is therefore unwise to assume that a small case is an approved booth or that it offers the protection legally and morally required.

Patrons of your motion pictures are entitled to the same protection the theatre offers, but very few auditoriums are so arranged that unsightly booths can be conveniently used, therefore the portable machine is the most practical, but safety must not be overlooked.

If you use the Victor Safety Cinema and Safety Standard film, you insure protection, besides you eliminate the expense of a booth, because both machine and film bear the approval labels of the National Board of Fire Underwriters FOR USE WITHOUT FIREPROOF BOOTH.

Our library contains so complete a collection of films that we have been for several years furnishing regular weekly service to thousands of customers, therefore can you conscientiously disregard the legal and moral obligation to protect life and property?

Send for our catalogs and let's get acquainted.

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TRADE MARK

Asphalt Association to Promote the Training of Highway Engineers in Colleges

Arthur H. Blanchard, Professor of Highway Engineering at the University of Michigan, says: "Highway officials, progressive educators and many prominent business men realize that a serious condition will confront the United States and Canada if graduates of our technical schools are not properly trained in highway engineering.

"Highway appropriations will increase rapidly during the next five years, as is indicated by the 1919 appropriations of $500,000,000 in the United States and a relatively large amount in Canada for highway improvements, and a widespread demand for the construction of a system of 50,000 miles of national highways by the United States Government under the direction of a National Highway Commission.

"Estimates made this year by the United States Bureau of Public Roads disclosed a remarkable field of opportunity for highway engineers, as investigation shows that for federal and state highway work alone, exclusive of cities, counties and towns, there are required 122 chief executives and administrators; 360 division engineers of the Federal Government, division chiefs of Bureau, division chiefs of highway departments, district engineers of highway departments, etc.; 3,630 supervising engineers and chiefs of party, and 6,350 junior engineers, rodmen, chairmen, draftsmen and others of similar calibre."

The Asphalt Association, 15 Maiden Lane, New York, takes the definite stand that as much time should be given to the essentials of highway engineering as is given to sanitary, hydraulic or railroad engineering. Professor Blanchard will coöperate with the engineers of the Association in developing a plan with colleges and universities under which highway engineering courses of instruction will receive increased attention.

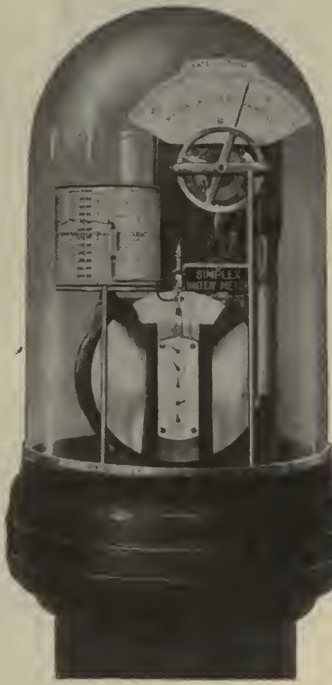
Former Sanitary Corps Officer with Wallace & Tiernan

Wallace & Tiernan Company, Inc., New York City, manufacturers of chlorine control apparatus, have recently announced that former Capt. Lucius A. Fritze, Sanitary Corps, U. S. Army, has become associated with their Technical Staff, and will be the manager of the new office which they have opened at Kansas City, Mo. This office will cover the territory comprising the states of Montana, Wyoming, Colorado, North Dakota, South Dakota, Nebraska, Kansas and Missouri.

A Compact Recording Water Meter

The indicating rate dial and recording meter shown in the following illustration is one of the products of the Simplex Valve & Meter Company, 112 North Broad Street, Philadelphia, Pa. One of its particular features is a well-designed float, acted upon by differential pressure, which causes it to move to a position of equilibrium thru a space that is proportional to the square root or any other desired function of the differential pressure. In all Simplex meters the float movement is relatively large in relation to the mercury deflection.

The record chart shown in the illustration is rectangular, and hence possesses the advantage of providing the same space for pen movement at all rates of flow. Furthermore, its record can be observed thruout the whole period at one view without rotation. If it is desired to check the quantities of flow from the chart, its area can be determined by the usual type of planimeter, the use of a special planimeter being unnecessary. Each chart is provided with a facsimile of the total register dial. Thus the meter reader may sketch in the point of positions on the chart at the time of its removal and have another record for checking any readings desired.



A RECORDING METER

Worthington Pump and Machinery Corporation Again Expands

Announcement has recently been made that the Worthington Pump & Machinery Corporation has purchased plant, patterns, accounts, patents and other assets of the Epping-Carpenter Pump Company located at Pittsburgh, Pa. This well-known plant will be operated in the future as the Epping-Carpenter Works.

AT LAST!

A REAL HIGHWAY HANDBOOK

AMERICAN HIGHWAY ENGINEERS' HANDBOOK

Arthur H. Blanchard, Editor-in-Chief and a staff of Specialists

This Handbook has been endorsed by the leading engineers of the country as *the* authority on highway work. It covers every subject to which the engineer is likely to refer. Every page is packed with reliable facts ready to be applied to your daily work.

County engineers — city engineers — and other officials, should have this book. Your position requires that you be acquainted with all types of highway construction, streets, paving, etc. Here is the book that tells everything you want to know—everything that you should know. Get your copy to-day. Mail the coupon.

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The American City

NEW YORK
NOVEMBER
1919

AN EXPLANATORY APOLOGY

Thru the articles appearing in the daily press most of our readers are already familiar with the unusual situation which has confronted the publishers of New York since October 1. On account of some internal difficulties among the labor unions in the printing trade, the publishers and employing printers of New York are confronted on one hand with unreasonable demands for shorter hours and wage increases from two of the local printers' unions, these particular locals having dropped out of their international organizations, thereby losing their charters and their connection with the American Federation of Labor. On the other hand, should the employing printers give in to these locals, other local unions still maintaining affiliation with their international unions and the American Federation of Labor would refuse to handle other parts of the work.

Our October issue was almost ready to be mailed when the printers ceased to work. All the material for the October number, including many engraving plates which could not be duplicated, were locked up in our regular printing shop in New York, and had to be left there until the employing printers and their workmen should come to terms, after which the issue would be mailed to our subscribers.

After waiting a month for the New York unions to patch up their domestic difficulties, The American City made arrangements to have its November issue published from an out-of-town printing plant. It is possible for this reason that our November issue may be mailed before the October number, but we wish to assure our readers that no number will be omitted, and we are counting on their patience and good nature in case their copies do not arrive in proper chronological order.

Albany Seeks Proper Setting for State Buildings

Protests the Overshadowing of the Beautiful State Education Building

By Charles M. Winchester

President of the Albany Chamber of Commerce

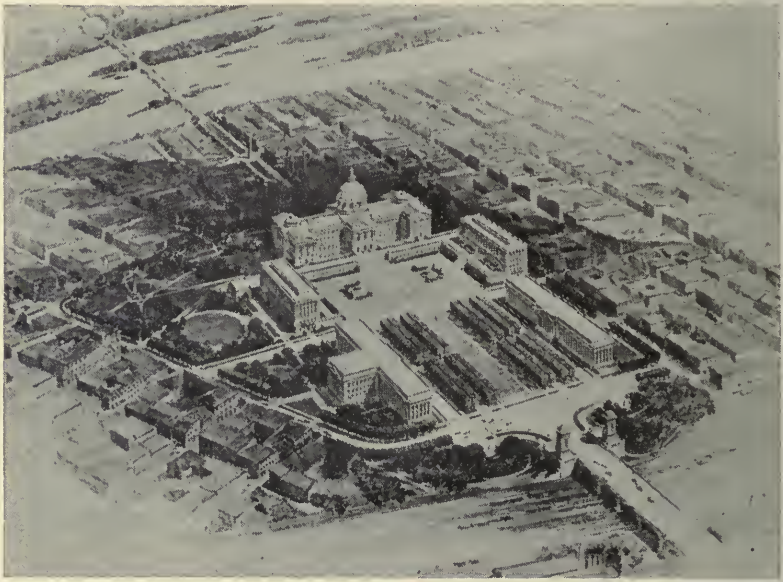
The citizens of New York State have just discovered the beauties of their magnificent Education Building—said to be the most beautiful in the United States. Since its erection it has been partially hidden by the old buildings that stood on the block immediately behind and to the west of the State Capitol. Many years ago the available office space in the Capitol was exhausted, and in consequence state departments have been obliged to occupy rented quarters in business buildings and even in former residences on the streets adjacent to the Capitol. As the labor of these departments has increased, they have had to overflow again into whatever space could be found, with the result that there has been loss of efficiency, loss of time to officials and citizens, and a great and ever-mounting expense to the state.

These conditions pointed out the great need of a State Office Building, and much discussion over its location naturally ensued among those interested.

The Legislature at the session of 1918 finally appropriated $700,000 for the purchase of the block of land west of the Capitol, where the old buildings have been razed. At the session of 1919 an additional $450,000 was appropriated for part of the cost of the new State Office Building. Of this amount $150,000 was made available this year for beginning the construction of the foundation. Following the removal of the old buildings behind the Capitol, the citizens of Albany and the state at large obtained their first real view of the stately Education Building. It was as if a curtain obscuring a beautiful picture had suddenly been torn aside. Formerly the onlv view of the Education Building had been from either end, or at most a very limited perspective. But with the removal of the old buildings it literally burst into view, and its hitherto unrecognized beauty caused the sudden awakening of the people to a realization of what they had been missing. It likewise brought a sober second thought that this beauty would in all probability soon be obscured again by a massive State Office Build-which would effectually blanket it from the south.

The wise man when he builds a home or a business plant tries to look ahead and build for the future. He knows that the farther he can forecast coming conditions and events the easier it will be for him in the end and the more satisfaction he will derive from his labors.

If this is true of the individual, it is also true in an infinitely greater degree of state government. People in their private capacities may not find it necessary to provide for more than a lifetime, but a government like that of New York State must build with a longer vision and some idea of permanence. The unexpected developments caused by the opening of the vista across the block behind the Capitol adds another factor to the situation.



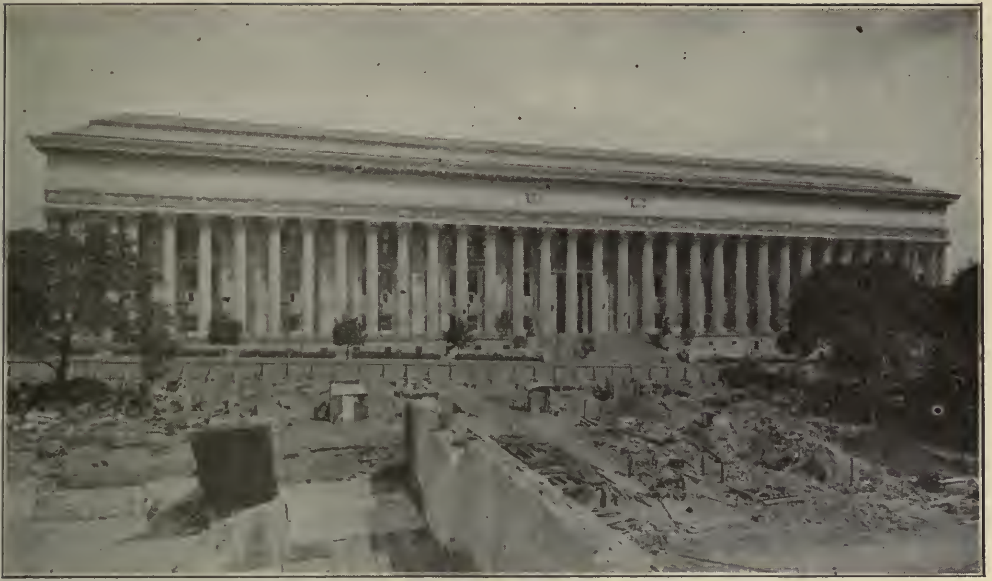
GENERAL VIEW OF CAPITOL PARK, HARRISBURG, PA., SHOWING THE ADEQUATE SETTING PROVIDED FOR THE STATE BUILDINGS

The state of New York is now confronted with a condition where something more than the enduring character of the buildings is involved. The state in planning to erect a new office building for state departments on the reclaimed block is in danger of ignoring the greater question of an artistic setting for existing and future state structures. The character of the buildings may change from generation to generation but when a grouping plan is established wherein may be set forth the beauty and grandeur of the whole, it will be conceded that the state should build not for a lifetime but for centuries.

The people of Albany as a result of a heightened civic spirit are taking more and more interest and pride in the artistic arrangement of their public buildings. Within the last few years that pride has manifested itself in the beautification of the Hudson River front and in providing park space at the foot of State Street, known as the Plaza, which only recently was an eyesore in the form of dilapidated buildings. The capital city has also awakened to the need of new pavements, new sidewalks and the planting of trees, as shown by the wonderful improvements along these lines, within the last five years.

The citizens and the government of every capital city are confronted with the difficult problem of coöperation with the state legislature from which they derive their legal life. Coöperation under these conditions is often difficult and frequently results in the overshadowing of the one by the other.

The citizens of Albany recognize this difficulty but they desire to coöperate with the state officials in working out an artistic grouping system for the state buildings which will conform with the municipal improvements



NEW YORK STATE'S BEAUTIFUL EDUCATION BUILDING

Seen for the first time across the block from which old buildings have just been removed. The state plans to erect a large office building which would effectually blanket the Education Building's beautiful facade. The citizens of Albany, led by the Chamber of Commerce, are seeking to preserve this space as a memorial park and to have the State Office Building located nearby

made and in prospect and result in advantage to both city and state. They would regret for the sake of the municipalities as well as for the credit of the state, to see costly and handsome structures located in a haphazard fashion without regard to the harmonious effect of the whole, for the waste and extravagance in this hodge-podge type of arrangement are fast becoming apparent to municipalities thruout the United States.

The time to avoid the possibility of destroying the beauty of such a building as the Education Building is before the foundations of any overshadowing neighboring structure are begun.

The Trustees of Public Buildings have authorized the State Architect, Lewis F. Pilcher, to proceed with the plans. It is understood, however, that they have authority to prevent further expenditure pending the meeting of the Legislature, January, 1920. It will then be for the Legislature to decide whether the original plan to erect the buildings on this plot should be carried out, or whether another plot of land shall be obtained on which to erect the new office building. While this question is of great interest to every patriotic citizen of Albany, it is of still greater concern to all the citizens of the state and the problem presented has a moral that may be applicable in other capital cities.

We constantly hear the lament that our public officials greatly lack in just such instances as this the foresight or vision to take into account the needs of coming generations. They are accused of permitting utilitarian considerations to interfere with the beautiful in art and even of allowing a false economy to add to the ultimate cost. For example, there is hardly a schoolhouse erected in any of our growing cities with sufficient space around it for a playground, to say nothing of architectural setting. In the past we have set up our public buildings with little or no regard for appropriate environment. Apparently our community sense of architectural fitness has not been developed to the same degree as in Europe and older countries. It is high time that we awaken to the great service rendered by the city planner whose business it is to happily combine art with utility.

Other states and cities are leading the way in providing for the harmonious grouping of their public buildings. In the city of Harrisburg, the capital of Pennsylvania, provision has been made for the erection of state buildings around a central park, in accordance with the illustration shown on this page. The Pennsylvania State Capitol faces the river, and the elaborate park and landscape embellishments have been arranged for and have already been partly carried out.

Cleveland and San Francisco, altho not confronted with the task of harmonizing state and municipal buildings, have embarked upon a great project for the grouping of their public structures. St. Louis and Milwaukee have under way plans conceived in a big way, with apparently ample allowance for future growth, and Madison, Wis., is famed for the grouping of its handsome state structures.

The task of the critic who would be helpful is only half completed when he has stated his objections to a proposed plan. He must suggest a more satisfactory alternative. Fortunately that has been done for him in the case of Albany.

Franklin B. Ware, former State Architect of New York, developed a plan while in office by which the Capitol would be the center of a group system of state buildings. This plan from time to time has been set forth in the newspapers and has received the admiration of all who have studied it. It would place the new State Office Building on the south side of State Street in the block between Hawk and Swan Streets to balance and conform in architecture with the style of the State Education Building. A recent modification of Mr. Ware's original plan proposes that the area west of the Capitol reclaimed by the demolition of the old buildings be dedicated as a memorial to the citizens of Albany who gave their service and their lives in the great war, and that a memorial colonnade be erected across the westerly edge of the park, forming a connecting link between the facade of the Education Building and that of the proposed State Office Building to the south. This plan has received much favorable comment and the proposed southerly site for the new State Office Building, according to a vote taken by the Chamber of Commerce among its members, seems to be the decided choice of the people of Albany. There are others who favor purchase by the state of the new telephone building for office purposes. Nearly all of this building is already occupied by state departments.

Many persons who visit Albany deeply regret the location of the telephone building on the hill southeast of the Capitol, as shown on the cover of this issue of The American City. Its height obscures the State Building from the south and mars what was once a beautiful landscape setting.

"Why didn't Albany people protest in time to prevent this defacement of their State Capitol?" is the question frequently asked by outsiders.

If Albanians neglected to protest against the proposed new State Building west of the Capitol they would be condemned for all time. They are trying to save the state from further ruination of what may yet be made a beautiful grouping plan of its public buildings on Capitol Hill.

In initiating a protest against what appears to them a serious mistake, the people of the capital city are acting as representatives of the state as a whole. They are on the ground and naturally know the situation better than the residents of any other section of New York State. They are confident that when the situation is brought to the attention of the people of the whole state, they will be as much in earnest in their insistence upon retaining the block of land as a park as are those who live in this city. They feel that the architectural beauty and convenience of their state buildings as they exist is seriously jeopardized and that now is the time to act.

The Albany Chamber of Commerce at a recent meeting adopted resolutions and appointed a committee to act with the state authorities in an endeavor to bring about a satisfactory agreement on this important question. The resolutions tell their own story and are as follows:

> "The Members' Council of the Albany Chamber of Commerce requests the Board of Directors to take steps looking toward the appointment of a committee whose duty it shall be to plan jointly with the state, county and city authorities, for the coördination of all efforts in connection with the construction of buildings for municipal or state purposes and for the development of a community spirit, in these particulars, between the city and state authorities.
>
> The Members' Council requests the Board of Directors to arrange for an annual reception to be given by the Chamber of Commerce, the citizens of Albany and the municipality to the Legislature as such and to the state officials at large, in order that by acquaintance with each other, there may be brought about a greater intimacy and a better understanding of each other's needs and purposes, as regards the development of Albany."

In accordance with these resolutions, the matter has been brought to the attention of Governor Alfred E. Smith as chairman of the Trustees of Public Buildings, and it is hoped that they will see the force of the argument for the retention of the space behind the Capitol as a memorial park and that the new State Office Building will ultimately be erected to the southward to balance and be a fitting counterpart to the beautiful but hitherto unappreciated Education Building.

The Motor Bus for City Service

Transportation Must Keep Pace with the Growth of the Community

The motor bus, the outgrowth of the American "jitney" and of certain principles of the English omnibus, is growing in importance as a public carrier. Its services are now interurban as well as local. The irresponsibility and lack of business methods of the pioneer jitney operators has given way to the carefully and efficiently conducted motor bus of to-day. The latter is as different from the jitney of ten years ago as the railroad of to-day is from the railroad of fifty years ago. No longer is there ignorant rate-cutting, inferior equipment or reckless operation. These features in recent times have been in a large measure completely removed.

Every new transportation agency sooner or later finds a strong antagonism in the older transportation agencies. When the subway was first proposed, it was argued that the subway would so materially decrease the number of passengers using existing public carriers as to make their operation unprofitable. This argument has long since been disproved. Now the same argument has been advanced against the motor bus. Motor bus lines are not direct competitors of a city's public carriers. Motor bus lines operate over routes that have no other kind of public transportation and at rates which until recently were double that of a city's ordinary public carriers. The motor bus differs in so many respects from the elevated train, the subway and the surface car that, with its advantages, it has come to stay.

What other type of carrier could secure a franchise to operate on such thorofares as Fifth Avenue, Riverside Drive, Seventh Avenue or Fifty-seventh Street, New York City? Certainly not an electric surface car, for it would mean laying tracks,

FIFTH AVENUE BUS, NEW YORK CITY, ONE OF THE BEST KNOWN BUS LINES IN THE UNITED STATES

A MUNICIPAL MOTOR BUS IN SAN FRANCISCO, CALIF.

a nuisance that would not be tolerated. The motor bus permits hundreds of thousands of persons to utilize these streets both for business and pleasure, which formerly could not be done, except possibly at considerable inconvenience or cost. These thorofares, which only a few years ago were used almost exclusively by those who could afford a private or hired conveyance, are now thru the medium of the motor bus conveniently and inexpensively available to everyone in the city. The motor bus functions as efficiently as the surface car, at the same time eliminating the necessity of tracks and noise attendant upon surface car operation.

When a car or a train develops a mechanical difficulty which prevents its further progress, all the succeeding cars or trains are delayed until the disabled car is repaired or removed. Not so with the motor bus — a breakdown ties up only the one bus. Succeeding busses merely pass around the disabled bus, and the schedule suffers but little.

Surface cars, elevated trains and subway trains are immobile. When tracks upon which these carriers run are laid, they become permanent fixtures. Laying tracks is not only expensive but keeps thorofares in an impassable condition for some time. The track once laid cannot be shifted to meet changing conditions. Lines that are unprofitable thru lack of patronage must, if they are discontinued, either leave their tracks, as a total loss, or must go to the expense of taking the tracks up and restoring the thorofare to its former condition. The motor bus is mobile. If something should occur to shut traffic off from one or more blocks of its customary itinerary, the motor bus does not suffer from the blockade. It merely changes its normal course. If, after a bus route is put into operation, the operators find the line unprofitable, they can select another route, transfer their equipment and begin operation within a very short time. No essential and expensive equipment is lost, and persons living on the abandoned or the new route are not inconvenienced by disfigured or impassable streets.

As a community develops, its transportation needs development. The common electric carriers of our modern cities usually either underdevelop or overdevelop their service. Overdevelopment results in a greater outlay of capital than is essential. Service which is maintained beyond the areas of need is not self-sustaining and forces the service in the densely populated areas to carry the losses. The passengers of the profitable part of the line therefore do not receive the best service that their fare might purchase. The motor bus, on the other hand, can extend its route just as slowly or as quickly as requirements demand, thus giving its passengers a full return for their fare. Cities may become overcrowded, and while there is territory for expansion, this expansion does not occur or is very slow. Such conditions may be caused by deficient or too distant transportation. A person prefers to live within a comparatively short distance from a transportation agency that will take him to his work without delay and in comfort. Where traction officials have been short-sighted, city expansion has been retarded. The motor bus unit is so cheap in comparison with other transportation units that it can be sent into territory for development purposes at a fraction of the cost of traction units. With the present congested conditions in cities, this is an important consideration.

The motor bus, being smaller, and lighter per passenger than the common electric carriers, is the logical transportation agency in crowded or narrow streets. In such streets surface cars running down the center crowd traffic, causing congestion and accidents. Motor busses run as do other vehicles, thus minimizing traffic congestion. When the storage battery cars which were run thru the crowded East Side of New York City were taken off by the Receiver of the New York City car lines, Mayor Hylan immediately substituted motor busses. These busses have been in operation only a short time, so altho definite conclusion cannot as yet be drawn, indications are such as to confirm the previous statement.

While the schedules of electric carriers have on the whole been quite satisfactory, there are certain important lines that are complained of constantly. A certain large bus company operating in one of the largest cities of the United States has so standardized its schedule that it is able to run a bus every 20 to 30 *seconds* over a distance of almost a mile and a half. This is better time than any electric carrier has been able to make.

The most prominent advantages of the motor bus line are:

1. Greater mobility
2. Absence of tracks
3. Continual expansion to meet newly developed needs
4. Ease with which routing can be shifted without loss of equipment
5. No obstruction of traffic or interruption of schedule thru mechanical difficulties.
6. Possibility of maintaining better schedules and intensive service
7. Less weight of vehicle per passenger than that of common electric carriers
8. Greater efficiency for certain kinds of traffic
9. Suitability for residential and business streets which are closed to the common electric carriers
10. Feeder to more rapid and long-line electric carrier

Great developments and improvements can be effected in interurban motor bus service. Anyone who has sought to travel cross-country recognizes the value of interurban service. This particular phase of motor bus service has not as yet left the experimental stage. Liberal laws, good highways, and sound economic principles are necessary. With these, the interurban motor bus will render the same efficient service that is now commonplace in interurban service.

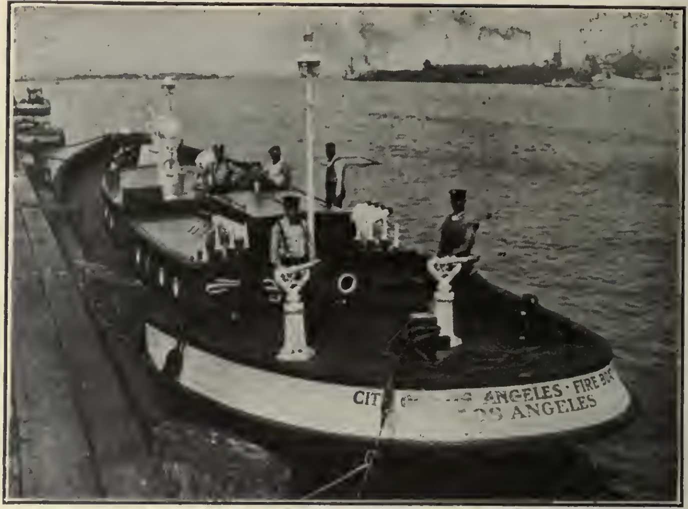
A New Type of Fire Boat for Los Angeles

Motorizing the Floating Fire Department Proves Highly Successful

By Charles Alma Byers

A new motor fire patrol tug has recently been completed and put into service in Los Angeles, Calif., for use in and about the city's harbor of San Pedro. Agitation in favor of building the boat was started during the fall of 1917, but several months passed before the City Council authorized the preparation of the plans and specifications. Construction work was started late in the summer of 1918, and the finished boat, completely equipped, went into service on August 8, 1919.

In general appearance the boat seems rather



THE NEW MOTOR FIRE BOAT OF LOS ANGELES FIRE DEPARTMENT

flat, on accoount of the absence of a pilot house or deck house of the customary design. The necessity for unobstructed deck room and the efficient handling of hose, nozzle and other fire-fighting equipment was realized as being of chief importance in a boat of this kind, and it was accordingly decided to dispense with the usual pilot house and to build in its stead two trunks over the propelling engine and pumping engines to provide the required head room and light. The boat is also designed with its deck rather close to the water surface in order that the nozzles may be easily trained upon fires underneath the harbor wharfs. Despite its somewhat squatty appearance, however, the vessel possesses very graceful lines and a general aspect of trimness.

The boat has an over-all length of 59.3 feet and a breadth of 17.7 feet, with a registered depth of 7.55 feet. It is of the gas screw type, and is of very heavy and substantial construction, two-thirds of its hull being ribs.

The propelling power plant consists of one four-cylinder open crosshead Union gas engine, of 10-inch bore and 12-inch stroke, rated at 125 horse-power, and equipped with both Bosch high tension and make-and-break ignition, and each cylinder is equipped with an individual carburetor.

The pumping plant is installed after the propelling engine, and consists of two direct-connected six-cylinder Gorham-Seagrave engines of 200 horse-power each, resting on cast iron foundations of special design. The centrifugal pumps have a capacity of 1,200 gallons per minute each, at 120 pounds pressure. The boat is especially equipped with an electric lighting plant which can furnish the equivalent of 220 16-candle-power lamps. The electric equipment also include three powerful portable search-lights. The pilot has complete control over the engine. Standing on the open deck with an unobstructed outlook in all directions, he has within convenient reach the spark and throttle of the propelling engine and the clutch, and can direct the use of the pumping engine by means of the ship's telegraph and gauges and by telephone communication with the pumping plant, as well as by push button control of the electric-lighting system.

This fire-fighting tug also carries two gasoline tanks of 550 gallons each, one 40-gallon chemical tank, six air tanks with 250 pounds pressure each, 2,500 feet of 2½-inch water hose, and 350 feet of chemical hose, as well as a total of eight rail nozzle holders of special designs. All engines are equipped with air starters.

The boat completely equipped, exclusive of its hose, cost approximately $58,000. It carries ready for fire-fighting service a crew of seven men, and has an ordinary maximum speed of 11 knots per hour. By using the pumping plant to develop rearward streams of water thru the turret nozzles, the speed may be increased to 13 knots per hour. The boat has been christened "The City of Los Angeles Fire Boat No. 1" and is the first vessel of its kind to be built for the city. It is under the direct supervision of Captain John C. Bailey, battalion chief for the San Pedro division of the city's fire department.

The Need for Federal Aerial Legislation

By Luther K. Bell

Information Department, Manufacturers' Aircraft Association

The recent non-rigid dirigible disaster in Chicago, which brought death and injury to a number of people, aroused that city to the need for adequate rules and regulations governing aerial traffic. But other cities than Chicago immediately sensed a lack of knowledge, control and jurisdiction over aeronautics. It was felt that the problem was nation-wide and as such required national legislation based on a clear view of the requirements of both the public and the art of flying, if both were to be protected.

Chicago, however, did not wait. Considering only their own immediate problem, which was to prevent a recurrence of the tragedy in Chicago, the city authorities at once took steps to secure local legislation which, in effect, would restrict flying over that city alone. The national needs apparently did not occur to them. At the request of Samuel A. Ettleson, Corporation Counsel of Chicago, Colonel Jefferson De Mont Thompson, Commander of the New York Aerial Police, drafted a proposed ordinance.

Colonel Thompson first said, "The public should be protected and assured of the elimination of the causes and the recurrence of serious aircraft accidents imperiling it," adding, however, "Flying is recognized as an essential commercial and military asset and should be hampered as little as possible to secure such protection and assurance and still secure to the art of flight the most rapid development." Continuing, Colonel Thompson said, "Spectacular flying which puts in jeopardy the lives of persons not in the flying machine should be prevented," but that any laws adopted should be such as to offer the least possible complication to the framers of an "early hoped-for uniform aviation law of national scope."

The terms of the ordinance as proposed by him read in part:

"No flight by aircraft wholly within the limits of cities having 600,000 population, according to the United States census of 1910, will be permitted unless the pilot, plane, engine, motor and city flying field for use are registered with the head of the city's Police Department and a registered certificate signed by him carried on the person of the pilot, together with a pilot's license from the United States or the state or the Federation Aeronautique Internationale.

"No manufacturer's machines or aircraft can be trial flighted or flown outside of the flying field before *bona fide* sale, unless the pilot has on his person a special permit from the head of the Police Department permitting and limiting such a flight.

"No flights shall be permitted from any field except one whose owners or lessees have registered it for such flights and have at the field a card signed by the head of the Police Department certifying to this.

"No flights shall be made with heavier-than-air machines at elevations below the gliding angle of the machine from registered flying fields. No flights shall be made by a lighter-than-air craft over portions of the city where houses are closer together than the greatest dimension of the aircraft, except over such routes as may be designated in advance by special city ordinance. No inverted or exhibition flying shall be done over any inhabited or crowded part of the city without similar ordinance."

Colonel Thompson's recommendations were inspired by most worthy motives and calculated for the advancement of aviation generally. Nevertheless his idea of municipal legislation is considered ill-advised. First, the ordinance would place a restriction against flying within the limits of cities having a certain population unless the pilots carry pilot's licenses drawn from various and conflicting sources, and unless they are registered with the Police Department.

Federal Control Essential

In preparing aeronautical regulation, we should lay down absolutely the principle of federal control. In other words, licenses should be issued by the Federal Government and by the Federal Government alone, and certificates of air-worthiness should be issued and registered by the Federal Government alone and not the police department. If we permit states to license airplane pilots we create a condition analogous to that existing to-day in railroad transportation, which has been hampered by having forty-nine bosses instead of one; that is, one in each of the forty-eight states and one in Washington. The United States Government, in issuing licenses for pilots, need not concern itself with the activities of the Federation Aeronautique Internationale.

In the second paragraph of the proposed ordinance, as quoted, it is noted again that the pilot must have a special permit from the head of the Police Department permitting flight. This places the Police Department ahead of the National Government, and if such actions were followed, it would be fatal to the proper development of aerial navigation. We now have federal inspection of steamboats, which are interstate in operation. We must have federal inspection of aircraft to determine their airworthiness, because in aircraft we are dealing not only with interstate carriers, but carriers in international trade, as was illustrated by the successful flights across the ocean and by the recent reliability contests between New York and Toronto, and between New York and San Francisco.

The third paragraph of the proposed ordinance, that covering registration, merits the same criticism — that registration is a federal function and not one that can be undertaken by any police department.

As to the final paragraph of the ordinance, just as soon as a city or state begins to make regulations regarding the height at which airplanes may travel over the city, just at that moment shall we see deplorable interference with the aerial traffic of tomorrow. This does not mean that regulations should not be imposed, but the duty belongs primarily to the Federal Government.

The Federal Government must establish flying routes. It must establish lanes of travel for various types of craft. The army regulations already prohibit inverted or exhibition flying over crowded parts of cities, and "stunt" flying is prohibited below a height of 3,000 feet. "Stunting" is not necessary in ordinary flying and is of practical benefit to pilot and passengers only in case something goes wrong with the plane, and then the pilot's knowledge of trick flying may serve to prevent a crash If "stunt" flying is to be prohibited by law, would it not be more practical to follow the principle of federal prohibition, that is, permit the Government to make one law? The proposed ordinance contains a provision against carrying in aircraft any material that can be exploded by concussion, or any highly inflammable material not in gas-tight cases. As applied to municipalities, this provision is unnecessary, for it would naturally form part of any basic law adopted by the Federal Government. With regard to "rules of the air and alighting," it should be emphasized further that these rules must be adopted by the National Government to be in harmony with international rules. Take the "fine and imprisonment for violation" of a city ordinance. Shall we have aeronautical travel in the future placed at the mercy of a police magistrate? What motorist does not know that police judges sometimes possess anything but the broadest possible views? How much worse would this be in the case of the air? In providing municipal legislation, the proposed ordinance lays down the wrong principle at the start. We should bear in mind that federal authority is supreme, and that if it is at all necessary, state or local legislation should be only supplementary. It is admitted that Congress should enact at once laws regulating aerial navigation.

Federal Inspection a Logical Prerequisite to Certificate of Airworthiness

The day is also at hand when manufacturers of aircraft, whether airplanes, hydroairplanes, flying boats, or balloons will look to the Federal Government for advice and counsel regarding materials used in construction. The day will soon come when the Federal Government will have to adopt a system of aircraft inspection comparable, possibly, to the practices now followed in dealing with water craft. Knowing the standard dependability of materials and the inherent strength of a flying machine, by rigid sand loading tests — such as were imposed during the war — the Federal Government in addition should require satisfactory flying proof before issuing a certificate of airworthiness.

Behind the issuance of such certificates lies coördination, which is vital to safe aerial navigation. Army and navy authorities should coöperate with officials having to do with civilian flying, so that maximum results can be achieved.

Having established the airworthiness of an airship or an airplane, the next step would be to license pilots and mechanics. The Joint Army and Navy Board of Aerial Cognizance, which at present is the recognized authority in issuing civilian licenses, has found that army and navy tests of fitness may be applicable also to peace-time flying, and it is possible that these standards may form an acceptable basis for future licensing. Remembering always that aerial navigation is not only interstate but international, it must be conceded that the issuance of licenses must continue to be a national responsibility.

Local Legislation Would Lead to Confusion

What about prohibited areas? The military and naval authorities have always shown commendable wisdom in limiting flights of a certain character over cities or other congested areas. Here is opportunity for a federal code which shall include military works and regions to traverse which will impose danger upon pilot, passenger or spectator. But to permit localities, each with a different conception of what is proper, to take the initiative, is simply to follow the lamentable procedure of haphazard legislation applied in the case of the railway and the automobile.

Aerial transport certainly has as strong a claim on national interest as the movement of passengers and freight by rail, road or water. It is a function of the Federal Government—not of the War or Navy or Post Office Departments alone—to map aerial highways. If these are outlined independently by communities or even by commonwealths, they will not join up state by state and manifestly cannot enter as a consecutive link into international air routes. To prepare an aerial highway is to do more than designate a straight line route between two given points: it is to map or photograph every foot of ground, to measure heights, to construct landmarks visible by day and night and to provide accurate information covering meteorological conditions at various levels.

Terminals Require Standardization

Perhaps the strongest argument for federal initiative is found in the matter of aerial terminals. Standards should be provided, and municipalities should have the advantage of all the technical engineering advice at the command of the National Government, so that airdromes, as established by the various cities, will be uniform in specification and will be included in the proper class. Much pioneer labor along this line has already been performed by the directors of our army and navy air services who have recognized the principle of uniformity. It is not within the province of the National Government to do for municipalities what they themselves should do, but coöperation and mutual encouragement are highly desirable.

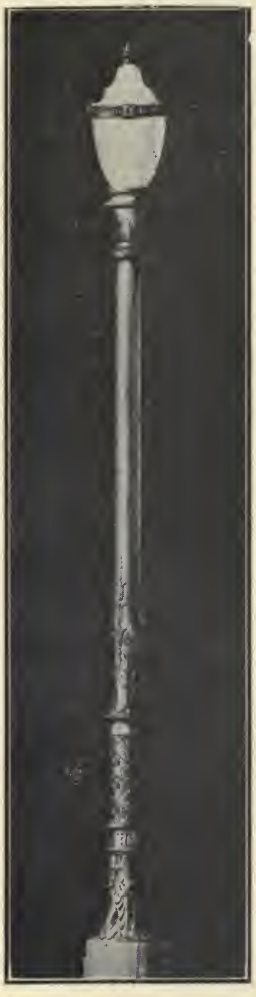
For a municipality or a state to prohibit flight or even to attempt to establish flight levels will be to confuse the responsibility which rightly belongs to the National Government. International practice must determine many national rules. Under proper supervision it is possible to permit flights which, if judged locally, would be absolutely barred.

National judgment, not community prejudice, should be the formulating guide for rules of operation in the air; for placing signals on aircraft and airdromes and for their proper display. The use of airplanes in interstate commerce is limited as yet, but it is not difficult to foresee dangerous complications if states undertake to prescribe rights of way, turns and precedence so that a pilot in flying from New York to San Francisco would not only be in frequent disobedience of local statutes but would actually be placed in peril because of the persistent confusion.

It is better to get started right than to attempt to correct unfortunate legislation. This view has been accepted in many states and is endorsed by the various flying clubs. Several score municipalities represented at the Southeastern Aeronautical Congress, which was held in Macon, Ga., last May, adopted resolutions calling on Congress to take the initiative in regulating aerial navigation, and recommending that the various states accept this fact, lend their support and, if necessary, enact concurrent legislation to the end that aeronautics shall have the benefit of a united policy.

Unique Lighting System for Saratoga Springs

By A. F. Dickerson



SINGLE-LIGHT, DUO-FLUX STANDARD FOR UPPER BROADWAY,

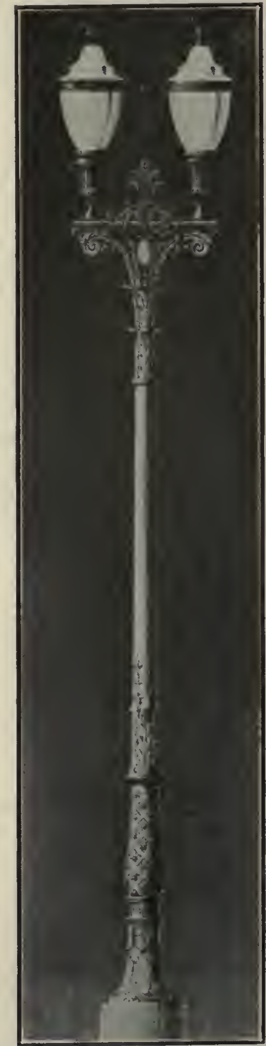
Along with other projects recently devised in Saratoga Springs, N. Y., to stimulate popular interest in this world-famous watering resort, the Saratoga Chamber of Commerce has advocated and successfully carried thru a movement to establish a modern system of lighting on Broadway, the main thorofare of the city, and thru Congress Park. W. D'A Ryan, Director of the illuminating Engineering Laboratory of the General Electric Company, was requested to design a lighting system for the city, and he decided to equip Broadway with the initial installation of the new Duo-Flux lighting unit.

This is the result of engineering investigations of several years' extent. It is a lighting fixture which combines beauty in design with a distinctive utilitarian feature. There are two lamps of unequal candle-power in each globe, and by the means of a relay cut-out, operated by short-circuiting the transformer at the station, the larger lamp is extinguished at midnight and the smaller one is lighted. This arrangement will permit the use of reduced illumination after midnight without a duplication of lighting circuits. The Broadway standard is colonial in design and has two Duo-Flux units, each equipped with a 1,000-candle-power and a 250-candle-power lamp. Therefore there will be 2,000 candle-power from each standard up to midnight, and 500 candle-power thereafter. The standards are located opposite each other and have spacings of approximately 135 feet. The height of the center of the light source is 20 feet. Approximately one mile of street will be lighted by 69 standards.

This installation will be financed by the Adirondack Electric Power Corporation at a cost of approximately $32,000. The city has entered into a ten-year contract with the electric company for this lighting, at a yearly rate of $10,350.

Congress Spring Park will also be lighted under the terms of the contract, at an annual cost of $2,650. Fifty-three standards with fixtures similar in design to the Duo-Flux, but smaller, will be installed. Each globe will have a 250-candle power series Mazda lamp. The installation cost will be over $10,000.

North Broadway, a residential extension of Broadway, will be lighted for a mile with the Broadway type of standard, excepting that one fixture will be used on each instead of two. Each globe will have a 600-candle-power series Mazda lamp.



TWO-LIGHT STANDARD FOR BROADWAY SARATOGA SPRINGS, N.Y.

Subsurface Terminals for Street Cars Open to Criticism

By John P. Fox

Consultant on Traffic Problems

A report like the one recently issued on rapid transit for Cleveland ought to attract more than local interest for several reasons. In the first place, such a report is of great value to other cities in suggesting how similar investigations ought to be made. The cities of the country are giving too little attention to the vital need of rapid transit lines as factors in directing growth in the right direction. Cleveland, Pittsburgh, St. Louis, Baltimore are all certainly large enough for rapid transit, the too long postponement of which means a loss of time to the citizens, a lack of healthful circulation of the inhabitants, and the menace of congestion in business districts if not in tenements.

With the breakdown of electric railways all over the country, cities are being faced with the possibility of being forced into the transportation business themselves, just in order to keep the lines running. Therefore, the more that public officials and people in general study the transit problems of different localities, the better equipped the official and the citizen will be to meet the responsibility of public operation where conditions bring it about. While relatively few cities may see any immediate need of real rapid transit lines, all communities are in need of having their growth properly stimulated by means of an adequate electric railway system; and a consideration of the experience and the mistakes of larger cities may help the smaller ones when they too have outgrown their surface lines. The Cleveland report itself shows the need of a broader point of view in dealing with the problems of rapid transit, and especially a greater consideration for the experience of other cities.

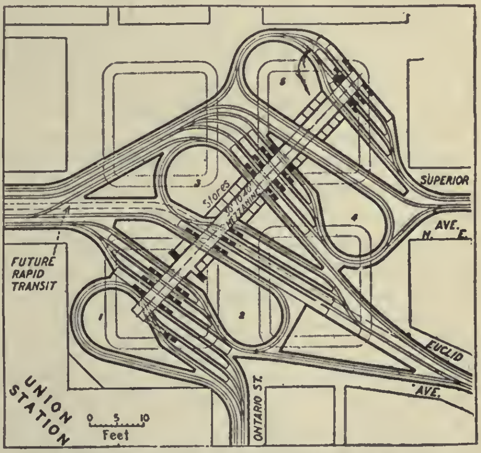
Underground Terminal Proposed for Cleveland's Surface Cars

The Cleveland Rapid Transit report has already been abstracted in the technical press so that it may already be quite familiar to some of the readers of The American City. Briefly speaking, in order to relieve the traffic congestion in the downtown section, it is proposed by the engineers to place the surface cars underground in shallow subways, all terminating under the Public Square in a large terminal having five loops and fourteen platforms. Ten subway tracks will enter and leave this terminal, spreading out into seventeen tracks in the station itself. It is recommended that the subways for surface cars eventually become part of a rapid transit system radiating from the Public Square, the first line built to be located on Euclid and Detroit Avenues, crossing the city from east to west, this first route to be supplemented by successive branch lines.

The cost of the initial surface car subways and the terminal under the Public Square is estimated at about $15,000,000 at present prices. As this expenditure would hardly bring in any additional revenue, tho making some saving in the expense of operating the present surface cars, it is recommended that the necessary funds should be provided by the issuance of municipal bonds.

Layout Appears to be Inadequate

Admirable as many of the features of the report are, it is hard to look at the plan of the enormous subway terminal for the Public Square without feeling that the Cleveland scheme is fundamentally wrong in placing the surface cars underground at such great expense. Huge as the proposed terminal is, it



SUGGESTED TRACK ARRANGEMENT FOR LOOP SUBWAYS UNDER PUBLIC SQUARE, CLEVELAND, O.

is not as large as it rightly ought to be, or as complicated as it probably would have to be in the near future in order to handle the traffic adequately. For one thing, the plan does not provided separate loading and unloading platforms for the cars as they come in, a feature found absolutely necessary at the largest terminals in Boston, after long experience with conflicting currents of passengers. Neither does the single mezzanine passage feeding the seventeen tracks appear likely to be adequate for incoming, outgoing and transfer passengers. Park Street Station, the principal terminal of the first Boston subway, proved inadequate almost as soon as it was opened, 22 years ago, and the station has had to be altered and enlarged greatly at different times since.

Boston's Surface Car Subways Disappointing

But the fundamental experience of Boston, covering a period of 22 years, has been that subways for surface cars are highly undesirable from almost every point of view. Boston had been building surface car subways from time to time since 1897 without much regard to the expense of construction or operation, until the Boston Elevated Railway Company began to find it had taken on more fixed changes than it could carry. An exhaustive investigation of the trouble was made by John A. Beeler for the Massachusetts Public Service Commission, and his chief recommendation was that all surface cars should be immediately removed from subways and viaducts and their place taken by trains. Mr. Beeler not only found that the operation of surface cars underground was wasteful in the extreme, but that it was undesirable from every point of view. The average cost of carrying a passenger on the surface lines of Boston was found to be 4.86 cents out of every 5 cents collected, whereas the cost of carrying the same passenger underground was no less than 8.10 cents for every 5 cents of revenue. Mr. Beeler further showed that an investment of only about $400,000 for making the change from surface cars to trains would bring about a saving in operating expenses of nearly $1,000,000 a year, and if his advice had been followed, the fare in Boston would never have had to be raised to the 10 cent figure, where it stands to-day, with a $4,000,000 deficit besides to be paid out of taxation.

Of course, if the $15,000,000 subway loops proposed for Cleveland are to be carried entirely by general taxation, the financial objection to the plan does not have so much weight. At the same time, is it worth while to spend such a large sum for a temporary expedient which has proved so unsatisfactory in Boston from every standpoint?

Cleveland Plan Would Increase Congestion

There are objections to the Cleveland plan even more fundamental than those already raised. Most serious of all is the influence which the terminal would have in crystalizing congestion of business and traffic about the Public Square. Even with surface cars removed, automobiles would quickly take their place, and there might be no real relief as far as the pedestrian is concerned. But to go still further, would not Cleveland, and every other city with a congested business district, do well to try to spread such congestion out as much as possible, instead of building a terminal which would tend to more concentration than ever.

Pittsburgh's Proposed Subsurface Loop Open to Similar Objections

The city of Pittsburgh has recently initiated a plan for a down-town subway loop for surface cars somewhat similar in idea to the Cleveland scheme, but open to still more serious objections. Costing about $6,000,000, the Pittsburgh subway could only accommodate about 60 per cent of the existing surface cars and would exclude entirely the North Side and West End cars, which would still have to be looped back on the surface on the edge of the business district. This plan would perpetuate the worst feature of the Pittsburgh street railway system in having no thru routes across the city and in requiring a double fare and change of cars for all thru passengers, a policy which not only imposes a most unjust charge upon the public and greatly increases the traffic congestion in the business section, but unquestionably deprives the company of a large amount of revenue from thru and short-haul traffic, and adds largely to the expense of operation.

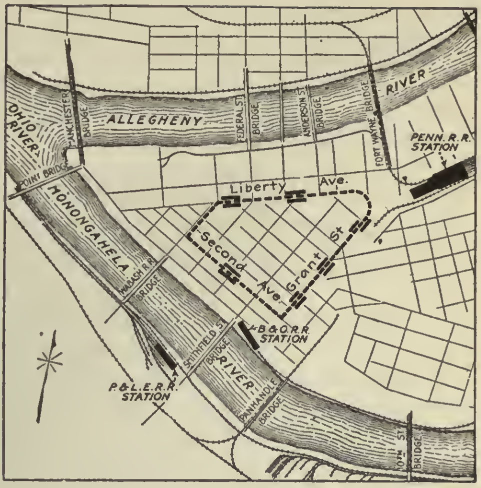
Cleveland has also clung to the same highly questionable policy of having no thru cars, but charges only an extra cent to cross the city, or 6 cents in all; whereas the Pittsburgh passenger to cross the city must pay 15 cents with tickets or 20 cents in cash. Is it any wonder that the Pittsburgh Company is in a receiver's hands, while the Cleveland earnings have gone on increasing in spite of the war?

Subway Loop Proposal Rejected Ten Years Ago

A curious aspect of the Pittsburgh situation is that the idea of a subway loop for surface cars was thoroly investigated nearly ten years ago and rejected as an unsatisfactory and wholly inadequate solution of the traction problem, while a rapid transit plan, admirable in almost every feature, was submitted only in 1917 by the city's Transit Commissioner, E. K. Morse. The $6,000,000 which it is proposed to spend on the downtown subway loop would practically build the initial rapid transit line recommended by Mr. Morse, a line ideal as to route and invaluable to the public from every point of view.

Business District Should Be Spread Out

If the experience of New York with subways has shown any one thing, it is the advantage of spreading business out by means of a rapid transit line. To-day the business district of New York is no longer limited to the lower end of Manhattan Island. It really extends at least from 59th Street to Flatbush Avenue, Brooklyn, a distance of about six miles. Assisted by the limitations on the heights of buildings imposed in 1916, office buildings, stores, theaters and hotels are spreading out all along the subway lines, all tending to reduce the congestion on the streets and on transportation lines, the dangerous concentration of population, and many other evils of an overcrowded business district. The development of 42nd Street as an office section has had surprising advantages. Suburban passengers from New York, New Jersey, Connecticut and Long Island can now come in on their trains to the Grand Central and Pennsylvania Stations or by the Hudson Tubes and walk comfortably to their work; or they can live on Murray Hill and the section to the north and walk to their offices equally well. The workers are as greatly benefited by the spreading out of business along the subway lines, and with all the congestion on the rapid transit lines there is probably more walking to work in New York than ever before in its history. Employes of the wholesale stores on Fourth Avenue and the retail stores on Fifth Avenue throng the cross-town streets every night and morning, coming from their homes on the east and west sides.



PROPOSED STREET CAR SUBWAY LOOP IN PITTSBURGH, PA.

New York City used to be cited as a monstrosity of bad planning, with all the business at one end of narrow Manhattan Island requiring all workers to be transported in one direction. The round city has long been held up as the ideal type, with all the business located at the center, and the population carried back and forth daily by radial transit lines. The New York Subway has greatly changed ideas upon this subject. The ideal type of city to-day would appear to be the long one where business is spread out along a rapid transit line, so that people can live on each side of the business district and walk to their work, instead of having to ride into the congested center of a round city, where skyscraper buildings are darkening the streets and offices more and more, and where land values are soaring beyond all reason.

So while Boston contributes the negative lesson to city transit and development, by showing the wastefulness and undesirability of costly subway terminals for surface cars, New York contributes the positive lesson that real rapid transit should be used to spread out congestion and to extend cities in the right direction along carefully determined lines. And this spreading out cannot be undertaken too soon. Instead of postponing rapid transit as long as possible, cities should undertake it at the earliest practical opportunity. All over the world, the larger cities are in need of the powerful influence of rapid transit lines to decentralize business and direct future growth. It is a mistaken idea that industry alone needs decentralization. Business needs it just as much, and as the railroads should be used to spread out factories, so rapid transit should be employed by municipalities to spread out business and relieve congestion.

Rapid Transit Features of Cleveland Plan Sound

The Cleveland report includes a plan for future rapid transit which is along the right lines. The $15,000,000 proposed to be expended for a highly undesirable and only temporary terminal plan would provide for a real rapid transit line whose benefits should be immediate and far-reaching. Both Cleveland and Pittsburgh should certainly undertake real rapid transit at once instead of costly half-way measures. So should Detroit, St. Louis, Baltimore, and perhaps still other cities. Lines should be planned as public improvements, and not as sources of profit to existing companies. They should be built and owned by the cities, as is now the rule in America, and the public could well afford to stand behind any deficit in fixed charges on operation, just as New York is doing under the dual contracts, in order to maintain a 5-cent fare to the ends of the lines. A great help in meeting the cost of construction would be to assess at least a part of the cost on the property benefited, as is so often done now in the laying out of streets and other public works. When the first subway was built in New York, the increase in land values in the outlying sections, due solely to the new rapid transit lines, amounted to no less than $80,000,000, while the total cost of the whole system was only $43,000,000. The landowners benefited could have paid the whole cost of the new lines and still kept nearly half of the enormously increased land value.

Rapid Transit Planning a Municipal Function

The planning of rapid transit lines, and indeed of all future transit lines, surface or subway, should obviously not be left to private companies, whose first aim is naturally profit. And as congested districts and overcrowded cars mean greater profits, no private company's views should influence either the time of beginning or the layout of rapid transit lines. The growth of our cities in the past has been influenced far too much by the building of trolley lines laid out solely for profit. This policy must all be changed, and changed fundamentally, if congestion of population and of traffic is to be reduced and healthy homes are to be encouraged instead of tenements.

The planning of future transit lines should be in the hands of men with the broadest outlook and the widest experience, such men as make up the city planning commissions of the country. Transit is being recognized more and more as belonging to the province of city planning — even more than to engineering. The transportation of the future should direct the growth of cities and no longer follow along behind.

Building the City for the Future

Make no little plans; they have no magic to stir men's blood and probably themselves will not be recognized. Make big plans; aim high in hope and work, remembering that a noble, logical diagram once recorded will never die, but long after we are gone will be a living thing, asserting itself with ever-growing insistency. Remember that our sons and grandsons are going to do things that would stagger us. Let your watchword be order and your beacon beauty.

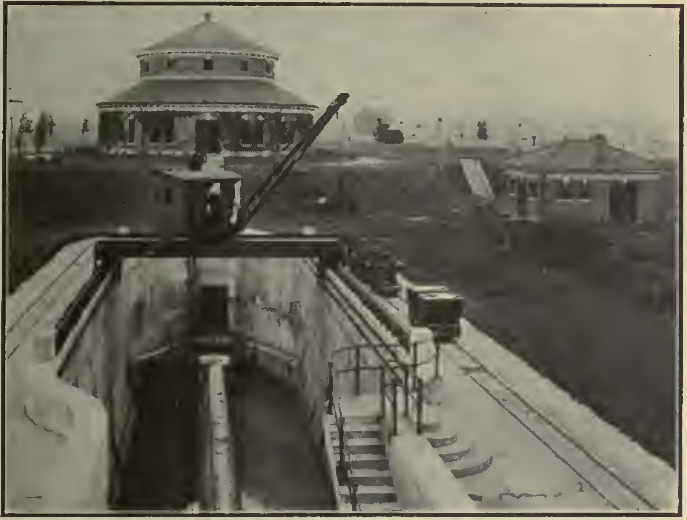
—Daniel H Burnham.

Preventing River Pollution from Albany Sewage

The New Sewage Disposal Works Constructed Before the War Are Now in Operation

By Frank R. Lanagan

City Engineer, Albany, N. Y.



GRIT CHAMBER, ALBANY SEWAGE DISPOSAL WORKS

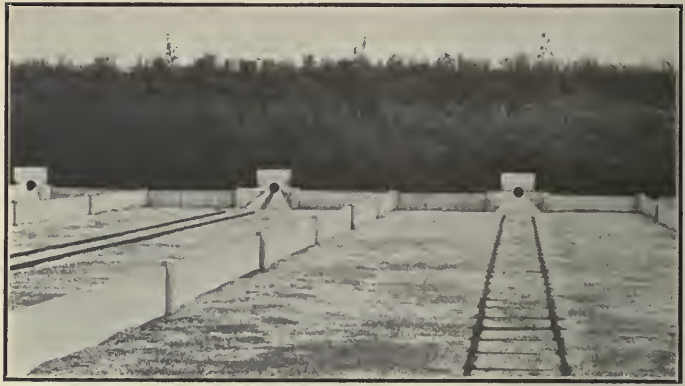
The water-supply of the city of Albany comes from the Hudson River, the growing pollution of which has been a matter of great anxiety to the public officials responsible for the efficiency of the water filtration plant. The entire sewage of the city was formerly discharged into the Albany Basin and the Hudson River thru many sewer outlets along the waterfront. The nuisance was quite noticeable in places where the dilution and velocity of flow were small.

It was clear that Albany could have no voice in restraining other more northerly communities from continuing or increasing the river pollution as long as she herself kept up the practice. In order to free herself from this charge and also to abolish certain nuisances near the sewer outlets, the city undertook, in 1915, the construction of an intercepting sewer and a sewage disposal plant. Both of these are now finished and in operation. The sewage disposal plant was completed just prior to the entry of the United States into the world war, but operation was delayed until early in 1919, when labor and supplies were more available.

The intercepting sewer is about 3 1-3 miles long and extends from Tivoli Street to the sewage disposal plant south of the city on Westerlo Island, increasing in diameter from 2 feet at the upper end to 6 feet at the disposal plant. It runs almost parallel to the river, and its work is to intercept and collect the dry-weather flow of sewage thru about thirty connections from the city sewers and convey it to the disposal plant. The storm water overflow is carried by means of relief valves thru the present outlets to the river. On Broadway near Tivoli Street there is a pumping station where two small pumps raise the sewage from North Albany to the intercepting sewer.

The sewer passes under Island Creek, which separates Westerlo Island from the city, and reaches a gate house where an emergency sluice gate controls the entire flow of sewage to the works. The sewage next enters the grit chamber, passing thru bar screens which remove floating matter, wood and rags. The wider, slower flow causes the gravel, sand and other mineral matter to be deposited on the bottom of the grit chamber. By means of an electric crane this grit is removed to small dump cars and is then hauled by a storage battery locomotive over industrial railway tracks up a ramp to the top of the embankment, which was built around the entire works as a protection against the highest flood water of the Hudson.

Thru a conduit the sewage passes from the grit chamber to the outer annular suction well of the pumping station. The suction well is sealed off from the rest of the station and is reached only by an entrance gallery over the conduit. The sewage pumps are submerged centrifugals in a dry well and are placed within the interior circumferential wall which forms one side of the suction well. The suction lines run thru this wall into the well and are always under a head, thus requiring no priming.



SLUDGE DRYING BEDS, WITH INDUSTRIAL RAILWAY AND REMOVABLE CONCRETE SIDE BOARDS

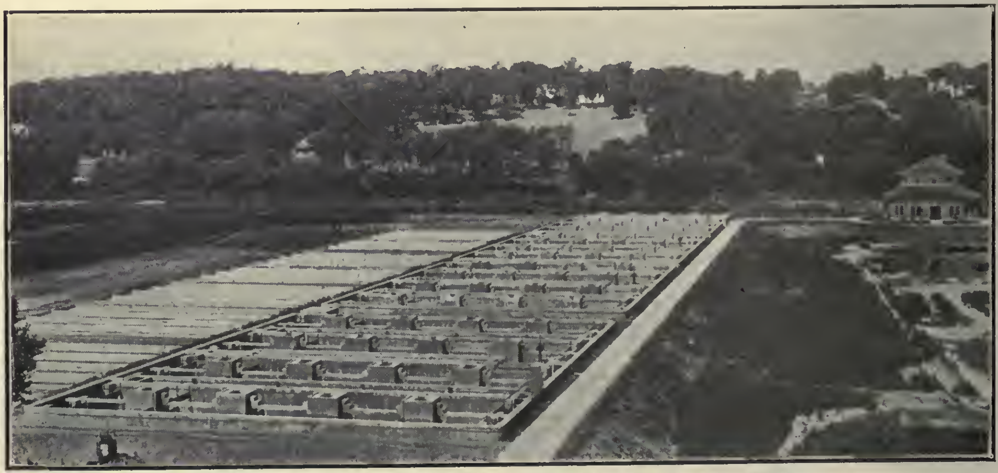
There are six pumps, three with a capacity of 10,000,000 gallons each per 24 hours, the others with a capacity of 5,000,000 to 15,000,000 gallons each. Allowing for one spare unit, this makes the maximum capacity of the plant 65,000,000 gallons. A float-controlled controller automatically starts and stops the pumps — one, two or more — as the flow of sewage increases and decreases.

From the point where the discharge lines from the pumps join — just east of the Westerlo pumping station — a 5-foot conduit, gradually decreasing in size, runs to and along the disposal works along the north embankment. Pressure pipes run from a Venturi meter in this line to an instrument in the pumping station which records the quantity of sewage pumped and the rate of pumping.

Branch conduits, 30 inches in diameter, lead from the pressure conduit to the four tank units — sixteen tanks, four in a unit, so arranged for flexibility of operation. The sewage may enter any unit so as to flow from north to south or the reverse thru the tanks, in either case entering and leaving each tank over an adjustable sharp-crested weir. Each tank measures on the inside 98 by 33 feet, with a depth of 29 feet, and has an upper settling chamber and a lower and inner sludge chamber. As the sewage flows thru the settling chamber during a period of two or three hours, the solids are deposited in the sludge chamber thru the slots between the two. The action is facilitated by the smoothness of the plastered and troweled lower sloping portions of the settling chambers. A cement gun was used for this work.

Bacterial action in the sludge chamber digests the solids into a practically odorless sludge. The gases escape upward from the sludge chamber but are prevented by an overlap in the slots from affecting the sewage in the settling chamber. This is the basic principle of these Imhoff tanks.

The ripened sludge is drawn off gradually thru cast iron pipes which lead up thru the center of each compartment, and is spread out on sludge drying beds of underdrained gravel and sand, about 12 inches thick. The



GENERAL VIEW OF ALBANY, N. Y., SEWAGE DISPOSAL WORKS
Pumping station at right, Imhoff tanks in center and sludge drying beds at left

dried sludge is spaded into cars and taken to near-by low-lying lands. It is then available for fertilizer. About two-thirds of the solids and bacteria are removed from the sewage by this treatment, and the purified remainder passes over the outflow weir thru upper channels to an outflow conduit under the south embankment along the tanks, and then thru an outfall conduit to the river.

A total of over one million dollars has been spent for this system, $360,000 for the disposal plant, $425,000 for the intercepting sewer, and $320,000 for the disposal pumping station. The project was under the direction of Wallace Greenalch, Commissioner of Public Works, and the City Engineer, with Stephen B. Vernon as engineer-in-charge. The consulting engineers were Hering & Gregory of New York City.

The contractor for the intercepting sewer was Henry C. Ulen of Chicago, and for the sewage pumping stations the Foundation Company of New York. The superstructures were sublet to the Peter Keeler Building Company of Albany, which also had the contract for the completion of the sewage disposal plant. The pumping machinery was installed by R. D. Wood & Company of Philadelphia, and the motors and switchboard were manufactured by the General Electric Company.

Municipal Electric Fire-Alarm and Police-Patrol Signaling Systems

Prior to 1850, even in the largest cities, there were no means for directing a fire-fighting force to the scene of a fire except by the primitive method of shouting alarms and striking bells manually. The use of the telegraph as a means for transmitting alarms was first suggested by Dr. W. E. Channing, of Boston, Mass., his idea being based upon the successful telegraph experiments of Professor Morse. In the year 1845, Dr. Channing published an article in the *Boston Advertiser* outlining a method whereby the telegraph might be utilized for fire-alarm purposes, and in 1852 the first fire-alarm telegraph system was installed in the city of Boston. At the present time there are only a few cities of any importance in this country that are not equipped with a fire-alarm telegraph system.

Types of Fire-Alarm Systems

The simplest form of fire-alarm system, frequently found in small towns, consists of but one single circuit with a few signaling boxes on the line; in fire headquarters the only equipment may be an annunciator with a bell striker attached, and there may be a further connection with a town bell for alarming the voluntary firemen who are not at headquarters, and the people generally.

A fire-alarm signaling box consists of a clockwork mechanism which when operated revolves a character wheel and causes the normally closed circuit to be successively opened and closed at regular intervals. This character wheel is either toothed or notched according to the sort of signal it is desired to transmit. Thus, the character wheel for signal 123 would have 1 tooth (or notch), a space, 2 teeth, a space, 3 teeth, and a longer space. A circuit opening device is so arranged that as the wheel revolves the circuit is successively opened and closed as described, causing the proper signal to be transmitted. These boxes are often provided with a telephone jack, which enables communication to be carried on between the boxes and the office by using a hand microphone equipped with a suitable plug.

A manual transmitter is a device used in the larger central fire-alarm stations for sending out alarms to engine and truck companies. These transmitters are of two general types — the dial type and the button type. Both machines operate the alarm gong circuits which reach the various engine and truck houses. With the dial transmitter it is necessary to set various dials until the signal number desired to be sent is displayed. The machine is then started and that particular signal is transmitted. This machine, by a manipulation of its dials, will send any combination of three or four numbers, depending upon the number of controlling plates in its construction. The button transmitter is a machine in which the signal transmitted is determined by a wheel termed a "button" which is placed upon it. In this machine it is necessary to have a separate wheel, or button, for each signal box in the system. These wheels are kept in a cabinet readily accessible to the machine. When it is desired to transmit a signal, 250 for example, to the fire-fighting force, wheel 250 is placed on the machine, which is then set in motion. Some cities which do not have central offices at which operators are stationed at all times, have in the central station of their fire-alarm departments a machine called an automatic transmitter, the functions of which are to repeat automatically over all circuits any signal received from any one circuit.

Courtesy Gamewell Fire Alarm Telegraph Co.

CENTRAL FIRE ALARM STATION, AMSTERDAM, N. Y.

Combined Fire-Alarm and Police-Patrol Signaling Systems

Statistics show that the number of signaling systems installed in cities and towns for the purpose of conveying information concerning fire and police service has increased constantly during the past three census periods. The miles of wire used for the service were 70,812 in 1907 and 107,658 in 1917, an increase of 36,846 miles, or 52 per cent, during the ten-year period. During the same period the number of boxes or signaling stations increased from 62,504 to 94,853, or 51.8 per cent. The number of fire alarms reported for the calendar year 1917 was 224,753, showing an increase during the ten-year period of 86.2 per cent.

Methods of Administration

The fire-alarm and police-patrol systems are controlled by various administrative offices and departments of city governments. There was a large decrease from 1907 to 1917 in the number of systems governed by boards of aldermen, boards of selectmen, city councils, etc. Statistics collected during these two years by the Bureau of the Census indicate a general tendency toward placing the control and management of these systems under the heads of the fire or police departments, boards of public safety, or departments of electricity.

The combined statistics for all municipal fire-alarm and police-patrol signaling systems in the United States for the year 1917 showed a total of 1,713 systems, representing, however, only 1,349 cities and towns. Of this number, 921 reported only fire-alarm systems and 19 reported only police-patrol systems; 364 reported as having both fire and police systems; and 45 as having combined and interchangeable systems.

Eliminating Overhead Wires

One of the improvements that has characterized the installation of signaling systems during recent years has been the placing of the wire in subways or conduits. In common with electric lighting, telephone, and telegraph wires, the tendency to place the wires for fire-alarm and police-patrol systems underground is growing rapidly. There is great advantage to be obtained from this practice, as storms and climatic conditions work havoc with exposed wires, and when these are protected there is less danger of injury to the delicate mechanism used for receiving and sending alarms.

There were 176 cities in 1917, compared with 132 in 1912, having a population of 30,000 or more, that reported fire-alarm and police-patrol systems, with a total of 50,254 miles of wire underground, an increase of 4,659 miles, or 10.2 per cent, since the census of 1912. The total underground mileage of the United States in 1917 was 51,721, and as 50,254 miles, or 97.2 per cent, of this was reported by the cities of 30,000 inhabitants or more, the fact that cities are generally placing their wires underground is well emphasized.

Chicago shows the largest increase in underground wire mileage, 2,328 miles during the period from 1912 to 1917; New York City follows closely with an increase of 2,201 miles, and Syracuse, N. Y., and Detroit, Mich., also show remarkable increases, 1,454 and 1,042 miles, respectively. Altho the 1917 census showed decreases in underground wire for a number of cities, this was due, as a rule, to the fact that the individual circuits had been enlarged and the total number of circuits reduced, resulting in a reduction of wire mileage without any diminution of the service supplied by underground construction.

Large Increases in Fire Losses Revealed

Owing to the constant increase in population in most cities it is only natural that the number of fire alarms and the assessed valuation of property should increase, but the 1917 census also reveals the almost incredible fact that approximately 60 per cent of the cities show an increase in amount of property destroyed, this in spite of the fact that old buildings in most of our large cities are being constantly replaced by modern fire-proof structures and every effort is being made to reduce fire losses.

In 1917 the per capita loss for Kansas City, Kans., was $11.13, the highest for the year. Lexington, Ky., and Lynchburg, Va., were next, with losses per capita of $11.04 and $10.42, respectively. For the year 1912 the per capita loss for Houston, Tex., was $51.14, while for Canton, Ohio, and Sioux City, Iowa, which had large fires during the year, the loss per capita was $36.94 for the former city and $12.69 for the later.

Of the 25 largest cities for which comparative data as to the property loss by fire are available, 15 show a larger loss per capita for 1917 than in 1912. In 7 of these cities the fire loss was less than $2 per capita in 1917; in 12 cities it was from $2 to $3; in 2 cities, from $3 to $4; and in 4 cities, over $4. The property loss by fire for these cities ranges from $0.56 per capita for Washington, D. C., to $5.27 for Boston, Mass. For these cities the assessed valuation aggregated $23,459,031,610 for 1917, as compared with $20,125,294,393 for 1912, an increase of $3,333,737,217, or 16.6 per cent; and the aggregate property loss by fire was $48,695,678 in 1917, as compared with $41,588,009 in 1912, an increase of $7,107,669, or 17.1 per cent.

Acknowledgment.—From *Census of Electrical Industries: 1917*, issued by the Bureau of the Census, Department of Commerce.

The Ohio State Conference on City Planning

The first Ohio State Conference on City Planning convened in Cleveland on October 20-21, on the invitation of the Cleveland Chamber of Commerce to discuss certain phases of city planning and legislation affecting the various cities of the state.

Invitations were issued to the twenty Ohio cities having a population of over 25,000, and to all the cities and villages in Cuyahoga County, in which Cleveland is situated. The municipal officers were especially invited; and the city plan commissions, the chambers of commerce, the real estate boards, the builders' exchanges, the engineering societies, and the architectural chapters in those cities were asked to send representatives. Sixteen of the twenty cities responded, also three cities and many of the villages in Cuyahoga County. The County Engineer, the County Auditor, and the County Commissioners of Cuyahoga County were in attendance, also twenty-one state senators and representatives. In all, there were 116 registered and accredited delegates at the conference, besides a fair attendance of the interested public.

Among the subjects discussed were: Architectural Planning of Civic and Industrial Centers, Zoning as Related to City Planning, Metropolitan Planing of Transportation, Highways, and Parks.

The legislative program adopted covered:

1. Bill authorizing all cities to adopt zone plans

2. Bill to permit city planning authorities to coöperate in the development of regional plans

3. Bill to permit municipalities to condemn land for any public purpose and to assess one-half of cost on property benefited

4. Constitutional amendment to facilitate taking of property for public purposes by providing that "in the taking of property for street purposes, the enhancement in value owing to the opening or widening of the street accruing to the part of an owner's property not taken may be considered by the jury in awarding compensation for the part taken."

At the last session, the Ohio State Conference on City Planning was formally organized, with Morris A. Black, of Cleveland, as President; Alfred Bettman, of Cincinnati, First Vice-President; E. E. Workman, of Akron, as Second Vice-President; and Miss Charlotte Rumbold, of Cleveland, as Secretary and Treasurer.

Portable Baths as an Aid to Schools

A Record of Ten Years of Progress in Baltimore

By Robert F. G. Kelley

Superintendent-Secretary, Public Bath Commission, Baltimore, Md.

In 1908 several members of the Baltimore Bath Commission became interested in a suggestion in *Charities and Commons,* that as the firemen in New York frequently turned the hose on boys in the city streets there, even so the manager of public baths might give a crude bath to the street boys by turning the water from the city mains on them on hot days.

The members of the Commission improved upon the suggestion, and late in the summer of 1908 placed a tent, 14 by 20 feet in size, on a lot in a congested residential section of the city. This tent contained four shower baths; 500 boys used it during the twelve days of its existence. The next season, experiments were tried in the construction of houses of different types, and finally a portable structure that could be put together in small sections was decided upon. Four of these were built and operated with great success. Mention was made of them in THE AMERICAN CITY for July, 1911, on pages 50 to 52.

In two localities where such portable bath houses were placed, permanent bath houses were afterwards erected, as the use of the portable bath showed the need for greater facilities. In another locality where there has been a portable bath for several years, a large permanent house will be built this year.

Originally these houses were intended for use only during the summer months, but the demand for them was so great that they were also operated during the winter, and the attendance has averaged about 60,000 per year.

During 1916, with the coöperation of the principal of School No. 76, and with the permission of the school board, the Bath Commission inaugurated the experiment of establishing a portable bath in the rear of the school. A schedule was made which permitted each pupil twenty minutes during school hours for bathing. The result was that at least 75 per cent of the children made use of the baths. Later the use of such baths was extended to other schools with equally satisfactory results.

Aside from the beneficial effects derived from the mere matter of cleanliness, a very important feature of the work is a general inspection of the physical condition of the children patronizing the baths. Minor abrasions or eruptions of the skin have been treated by the matron. Cases which require more competent medical care have been called to the attention of family physicians or physicians at dispensaries. Such a service has its effects, not only on the children who are thus cared for, but thru them upon their families. It has opened to the Free Public Bath Commission new opportunities to render far-reaching service along lines of public health.

TWIN PORTABLE BATHS IN USE IN THE REAR OF ONE OF BALTIMORE'S LARGE PUBLIC SCHOOLS

Increasing Municipal Revenue by Developing Harbor and Inland Waterway Facilities

By Charles W. Stanford

Consulting Harbor Engineer, Mann & MacNeille, New York City

Owing to the increased cost of municipal maintenance, many cities and towns in the United States, having developed to their utmost various present sources of municipal income, are interested in creating new sources of revenue which may at the same time aid in their general expansion. The great outstanding features which have been brought before the eyes of the world during the past few years of war are, first, the shipping interest, and, secondly, the adequacy or inadequacy of terminal ports for taking care of it.

Some good may often be derived by comparing conditions at home with conditions in other lands when looking for lines upon which improvement may be patterned. New communities all over the world have obtained ideas for development from many of the older settlements of Europe. European seaport harbors have usually been built up in a systematic manner, upon a comprehensive plan interwoven with the general plan of the city itself. The same condition is found in the interior cities which have produced harbors upon existing river systems.

The seacoast harbors have almost all been created only after the expenditure of vast sums of money for prodigious digging operations from the sea or for building artificial walls in order to provide the necessary harborage. Most of the interior harbors upon the river systems have also been made tenable only by extensive regulation works, and it is probably a safe premise to assume that, on account of the great natural disadvantages, none of these harbor works could have been accomplished without governmental help or initiative, and consequently not without a well-studied plan.

American conditions are in many respects just the opposite from those found in European harbors. Here the rapid growth of the country made necessary the rapid growth of its ocean harbors, all of which was possible because nature had been kind on this side of the Atlantic in providing access with comparatively little cutting from the sea,— unlike the extreme instances at Glasgow, Hamburg and Bremen,— and furthermore with none of the artificial handicaps in the way of expensive creative dock work to overcome tides. Consequently, many of our seaports have been built up on the lines of least resistance, the various ownerships simply following the shore fronts to the extent of their holdings, and building upon any lines which suited their fancy.

While the Government has spent comparatively small amounts of money upon the ocean seaports, it has spent very large amounts on the regulation and deepening of interior river systems in order to make them adaptable to the needs of commerce. This lack of plan and coördination may have stimulated rapid growth, but the stabilizing of these ports in

THE GOWANUS IMPROVEMENT, BROOKLYL, N. Y., SHOWING THE DILAPIDATED WATER-FRONT BEFORE IMPROVEMENT

The almost shoal water was a dumping place for abandoned wrecks, and winter storage for canal barges

THE GOWANUS IMPROVEMENT AFTER SYSTEMATIC RECLAIMING
The slips were dredged to a depth of 35 feet, bulk-headed and filled, reclaiming land for tracks, warehouses and terminal buildings. The illustration shows one shed completed and a concrete deck ready for another

recent years, and especially since the beginning of the war, shows that in the future a definite and better plan must be followed in order to use more intensively and economically the limited areas that are available, and thus meet the competition from ports which have greater natural advantages.

New York furnishes an extreme example. Even after the wisdom shown in 1870 in establishing a department for the control of its water-front, and in the expenditure of many millions for the creation of the greatest port in the world, it is at this late day the subject of a joint investigation by the states of New York and New Jersey for a comprehensive plan of coördinating all parts of the port.

Whatever may be said of the conditions of our harbors, and the similar state of the harbors for reception on the other side at the commencement of the war, the fact that the European river systems had been developed, and in many cases with particular attention to quick and economical handling, proved an invaluable asset to the American Expeditionary Force in moving material to the front in France. Our seaport and river cities that are susceptible to development may well try to follow some of the systematic methods used by cities in Europe in undertakings for their upbuilding.

While state control of public utilities in general is still a much-mooted question, there appears to be no good argument against, and no open opposition to, the public control of waterfronts at centers of population. The instances on this side of the Atlantic where such control has progressed to public ownership have not only proved advantageous to the cities thru increasing their growth and standing, but have also proved monetary successes. New York has already been mentioned as one of these instances; older public enterprises of this kind are at New Orleans, San Francisco and Montreal; and Baltimore, Philadelphia, Portand, Oregon, St. Louis and Seattle are among the larger ports which have more recently followed the same lines.

In all municipalities, large and small, the tremendous increase in the yearly budget for maintenance, and for carrying the large bonded indebtedness incurred in the past, is one of the great problems now before all public officials. The lower expenses in the past, together with the rapid growth of towns and cities, made the appropriation of these sums of money possible without any inordinate revolt from the taxpayers, altho many of these improvements may have been non-revenue-producing municipal undertakings. Municipalities are generally desirous of increasing their revenue-producing undertakings, among which water-front development should be seriously considered by cities where such work would prove advantageous. The present increase in shipping which must be provided for at ocean ports, the extension of our river systems, which with the connecting canals have helped to meet the deficiency of the railroad system of the country, together with the absolute need of producing more income, will lead American cities to investigate more fully what assets they have in their water-fronts.

Many places are awaiting development today and do not proceed for lack of definite plan and of a policy showing the attitude of the governing body. This hesitancy has the effect of throttling any initiative in the expenditure of money by private interests. There are undoubtedly many places whose water-fronts, on account of uncertain ownership and lack of plan, are idle, which might be developed if public control was established.

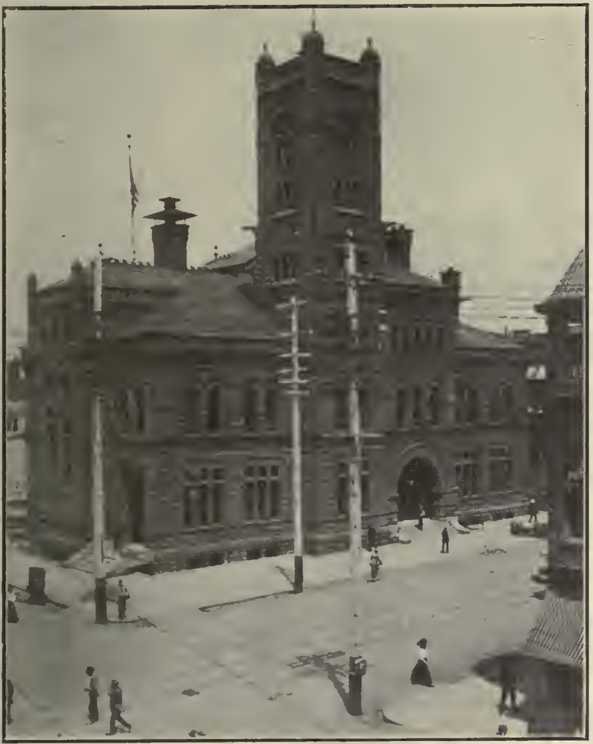
Shade Trees for Business Streets

Sacramento, Calif., Vastly Improves Trade Center with Attractive Foliage

Clear evidence of the value of tree-planting in the business section of a city is given by the accompanying pictures. One shows the Federal Building in the heart of the business district of Sacramento, Calif., as it looked four years ago. The other shows the same building as it is to-day, the striking difference being that the building is now surrounded by shade trees.

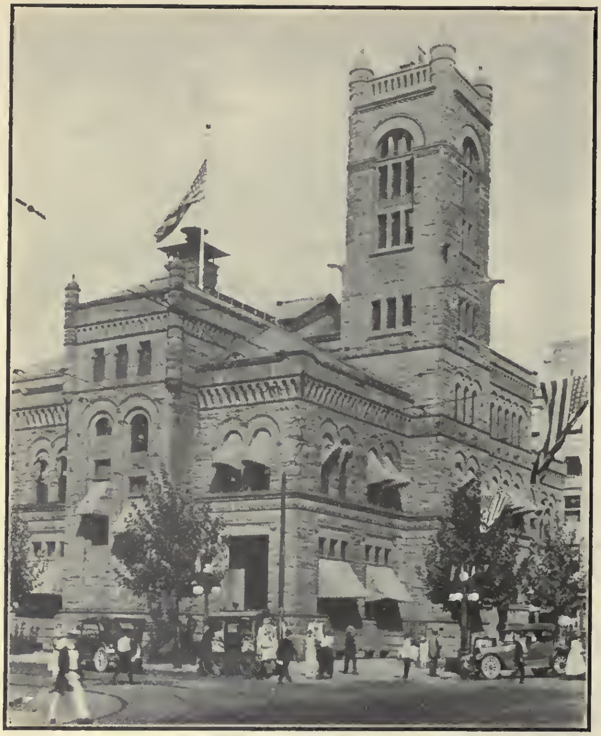
The campaign for the planting of trees in Sacramento's business section was inaugurated by G. M. Homans, California State Forester, and actively advocated by the editor of the Sacramento *Bee*. Strong arguments in favor of the movement were that the trees would be a blessing to the populace by affording relief from the sun's rays during the summer months; and that the appearance of the down-town section would be greatly improved and beautified. Many objections were voiced, some of them being that trees in the business section would make Sacramento "look like a country town," that the roots would raise havoc with the cement sidewalks, that the leaves would fall off and litter the walks, the branches would interfere with trolley wires, and so on.

The type of tree chosen was the oriental plane, primarily because it does not shed leaves. Postmaster Thomas Fox of Sacramento was among the first to act upon the suggestion. The State Forester prepared plans for the planting of the trees, holes being bored thru the walks and the roots of the trees placed in large boxes, specially designed, beneath the walks. At his own expense Postmaster Fox had the trees planted — twelve of them in all — and it was not necessary to replace a single one. With an actual demonstration thus made and overcoming many of the early objections, other citizens began to approve of the plan, and to-day there are half a dozen business places with trees of this kind planted in front of the buildings.



FEDERAL BUILDING, SACRAMENTO, CALIF., AS IT APPEARED BEFORE THE STREETS WERE MADE MORE SIGHTLY

The trees shown in the picture have, after a growth of four years, reached about



TREES AND THE REMOVAL OF UNSIGHTLY TELEGRAPH POLES HAVE MADE THE FEDERAL BUILDING IN SACRAMENTO FAR MORE ATTRACTIVE

half the size they will attain. Iron crates, placed around the trunks, have given them a good, straight start upward, and, contrary to the popular objection at the beginning, the sidewalks have not been littered with leaves.

That one of the arguments put forth in favor of the trees has been justified is shown by the fact that some of the very persons who were against the idea now find the shade of these trees — even tho the trees are still young — a pleasant relief from the sun's rays. As to the esthetic feature, the pictures themselves provide an opportunity for the reader to pass judgment.

About the same time the trees were planted, electroliers were erected in Sacramento's business district, and the pictures show how the fixtures have improved the appearance of this section. It will be noted that the electroliers are designed for decorative purposes as well as lighting purposes, for, whenever occasion requires, flags are placed in sockets on the arms which hold the lamps.

Let Us Have Daylight Saving

By Samuel A. Welldon

Vice-President, National Daylight Saving Association

There are practically no opponents of daylight saving among the residents of municipalities. The opposition that caused Congress to repeal this health-giving measure over the President's veto was largely representative of rural districts. Without in any way attempting to undervalue the great fundamental contribution of the farmer to our modern life — for we know that without his efforts the inhabitants of the cities could not live — the National Daylight Saving Association feels that there is no reason why the objections of the farmers should prevent the residents of cities from enjoying the additional hour of daylight.

Since the rural representatives in Congress seized the oportunity when some of the representatives of the cities were absent from their posts to force thru the repeal bill, there is only one way by which cities can obtain the added hour of daylight, and that is by local ordinance. Some confusion, it is true, may result, but that the confusion so resulting is not serious, is evidenced by the fact that Detroit and Cleveland operated on the daylight saving plan long before it became a national law, and the citizens of those cities and the territories surrounding them found no difficulty in adapting themselves to the schedule. For this reason, the National Daylight Saving Association urges the adoption of an ordinance substantially like the following:

"The people of ———— do enact as follows:

The standard time [insert name of city or town] is that of the [insert meridian] of longitude west from Meridian, except that at 2 o'clock ante-meridian from the last Sunday in April of each year standard time thruout [insert city or town] shall be advanced one hour, and at 2 o'clock ante-meridian of the last Sunday in September of each year such standard time shall, by the retarding of one hour, be returned to the mean astronomical time of the [insert meridian] of longitude west from Greenwich, and all courts, public offices, legal and official proceedings shall be regulated thereby."

It will be noted that the proposed ordinance turns the clock ahead one hour on the last Sunday in April instead of the last Sunday in March, turning it back the last Sunday in September instead of in October, thereby giving us five months instead of seven of daylight saving, which is believed to be sufficient, as the amount of daylight actually saved during March and October is comparatively slight.

The Board of Aldermen of New York City has unanimously adopted a daylight saving ordinance. Pittsburgh is soon to adopt a similar law. Hoboken, Newark, Jersey City, Worcester, and in fact the majority of the cities and towns in the New England States and thruout New Jersey and Pennsylvania, and as far south as Richmond, have notified the National Daylight Saving Association that they will follow the example of New York City.

The enactment of town and city ordinances will make the adoption of state laws easy. And with state laws, it seems to advocates of daylight saving that Congress, realizing its error, will restore as a federal act the statute for daylight saving that is wanted by a large majority of the people. It was the intention of the National Daylight Saving Association to confine its efforts this year to the eastern time zone, but the movement has spread as far as Utah. Chicago is preparing to come into line, and contiguous territory will follow suit. Many places on the Pacific Coast want the daylight saving law. It looks now as tho most of the country next year, regardless of Congress, will enjoy daylight saving—"the poor man's violet ray."

Pittsburgh's Graded Tax Law and Its Results to Date

By William McNair

Housing is, first of all, a land question. If there are no sites on the market at reasonable prices, few houses will be built. This situation cannot be met without the use of some device which will act as a gentle persuader to the land speculator to let go of his holdings. Pittsburgh thinks it has discovered this device in what is termed "the graded tax law." By the working of this act, the tax burden on vacant lands is increased gradually by small percentages, while att the same time the millage tax on buildings is decreased by 10 per cent every three years.

This gentle persuader has had the effect of putting on the market a considerable number of choice lots all over the city that have been held vacant for many years. The lowering of the price per front foot has had a great effect in the stimulation of building. Incidentally the banks and trust companies are getting rid of their holding of idle land in residential sections, and it is coming to be recognized that the holding of land out of use is not only poor citizenship, but bad business. It does not pay to prevent house building as much as it once did.

The law has had another beneficial effect on the housing situation. After houses are constructed, the taxes on them are lowered. In 1919, buildings are taxed at 70 per cent of their valuation. Assessments are still 100 per cent, but the rate or millage on buildings is reduced. Two years hence they will be taxed at 60 per cent, and three years later at 50 per cent of their assessed valuation.

The "Build a Home Campaign" is in full swing, but many cities still fine or penalize the man who builds just because he has yielded to the public urging. If a man paints the town red, he pays his fine, is let go, and that is the end of it, but if he paints his house or, much worse, builds a new one, he must go to the city hall every year and pay a fine in higher taxes until the paint wears off or the house falls down. Housing conditions in Pittsburgh have been greatly improved since we began to make it less burdensome for the house builder and the house owner. This is in line with our long-established policy in Pennsylvania. For many years we have exempted manufacturing corporations from state taxes. In cities of the first and second classes we now exempt machinery from city taxes. The lowering of taxes on buildings has been a logical step along this line of encouraging industry and thrift.

The Cincinnati Civic and Vocational League

An Organization Which Teaches Civics as a Living Social Experience

By Irene D. Cornwell

Director of the Civic and Vocational League, Cincinnati Public Schools

A number of activities were developed by the Cincinnati Chamber of Commerce in the latter months of 1914, having in view the education of the public at large in the civic, industrial and commercial advantages and needs of the city. The first steps taken were to secure a wider use of the schools in serving the industrial needs of Cincinnati and to provide for extensive coöperation by teachers and pupils in this splendid movement.

Early in 1915, at Woodward High School, Charles R. Hebble, Executive Secretary of the Chamber of Commerce, Dr. Randall J. Condon, Superintendent of Schools, and Frank P. Goodwin, Director of Civic and Vocational Service and Community Centers in the public schools, founded the Cincinnati Civic and Vocational League, a federation of the civic clubs in the eighth year and high schools of Cincinnati, to be linked with the Chamber of Commerce and to hold its meetings in the Chamber of Commerce Building. Any pupil in the grades mentioned is eligible to membership in a constituent club by committing to memory and subscribing to the Athenian Oath.

The purposes of the League as stated in the Constitution are:

1. To study the civic and vocational life of the city by first-hand observations
2. To learn what opportunities the industrial life of the city offers to young people
3. To teach its members to think seriously and wisely concerning the various vocational studies
4. To assist in preparing its members to take an active and efficient place in these vocations
5. To connect more closely the work of the public schools with the life of the community
6. To teach its members to aid effectively in meeting the civic needs of the community, and to assist civic institutions in promoting the general welfare of the city

Instruction in civics in the Cincinnati public schools had begun in September, 1909, with fifteen volunteer teachers in the eighth year under the direction of Frank P. Goodwin, then a teacher of history and civics in Woodward High School, and had gradually extended thruout the elementary and high schools. Civic clubs had been organized in a number of the schools, to afford ways in which the boys and girls might take an active part in community affairs and thus become good citizens.

Beginning with twenty clubs in 1915, the League has increased until to-day it has ninety-eight clubs with a total enrollment of 5,000 boys and girls. The League is controlled by a Board of Directors composed of the president of the constituent clubs. The Board meets regularly the second Tuesday of each school month in the Exchange Hall of the Chamber of Commerce.

It had been the intention of the Chamber of Commerce to develop from this federation of civic clubs a Junior, or Boys', Chamber of Commerce, but as the plan called for the coöperation and guidance of the teachers in charge of mixed classes where these clubs were organized, it became necessary to include girls in the movement. Therefore, in October, 1915, the committee appointed by the President of the Chamber of Commerce to sponsor the League requested the President of the Woman's City Club to appoint a committee to coöperate with the men's committee. Since that time a Joint Committee of Sponsors, consisting of representatives of the Chamber of Commerce and the Woman's City Club, has been the chief counselor of the League. It endeavors to promote the purposes of the League as stated in its constitution and to further the teaching and practice of good citizenship thruout Cincinnati's public educational system, from the kindergarten thru the Municipal University.

The Joint Committee of Sponsors strongly emphasizes the individual's responsibility in his local community, but at the same time has earnestly endeavored not to develop community selfishness, but to te teach these boys and girls that as the individual must sacrifice his selfish interests for the group, so must the group sacrifice for the welfare of the city, the city for the state, and the state for the nation. The sponsors believe that the era of internationalism upon which we have entered calls upon the schools for the development of a program for the teaching of good citizenship. The committee inaugurates for the League only such policies as meet the approval of the Superintendent of Public Schools and the Boards of Directors of the Chamber of Commerce and the Woman's City Club.

It is unusual to find an organization in which the objects as stated in the constitution are really accomplished, but this is the case with the Civic and Vocational League. Every one of the purposes stated in the constitution has been met. The following list of League activities supports this assertion:

Excursions to places of employment, with preparation beforehand and explanation and discussion afterwards

Weekly group mass meetings at the Chamber of Commerce, where first-hand contact with business men and business methods is secured

Effective participation in such movements as the clean-up campaigns, fire prevention, war activities, coöperation in the preparation of a civic exhibit and in the publicity work for the National Child Labor exhibit

Coöperation with health, police, fire and street cleaning departments

Semi-monthly trips to the City Hall, where the constituent clubs are addressed in the Council Chamber by the Mayor on city government, and by city department experts in their own headquarters

Garden work

Collection of books and magazines for soldiers

Automobile excursions to important historical points in the city

Coöperation in Americanization, community center, and Junior Red Cross work.

Leadership in a movement to secure a suitable memorial for General William Henry Harrison

Making of addresses at business men's clubs, improvement associations and mothers' clubs in the interest of school and community improvements and other activities of like nature

It is not the constitution that makes the League what it is, but the vital personal interest and leadership of the men and women who are guiding it—the Superintendent of Schools, the Joint Committee of Sponsors, the teachers of those grades where clubs are formed, and the principals of such schools. The wise counsel and fine backing of Superintendent Condon are the source from which the League has drawn continual inspiration. He says: "There must be not only service but *intelligent* service. The pupils must not only know the city as they see it, but must be given a background against which to project the city of to-day, so that they may more clearly vision the city of to-morrow."

During the last year, at the Superintendent's suggestion, the Board of Directors of the League sent committees to Governor Cox, Mayor Galvin, ex-Congressman

LEAGUE BOYS IN A CLEAN-UP CAMPAIGN

Allen, Congressman-elect Stephens, and the County Board of Commissioners to ask their aid in various movements that the League had inaugurated.

In some of the schools the League clubs have been organized as city councils. The entire Avondale school is organized as the Avondale School City. Altho the government of this school might well be called invisible, the opportunities for initiative and the practice of good citizenship are innumerable. The Mayor and four members of the Avondale School City are on the Board of Directors of the League.

The Joint Committee of Sponsors is issuing a series of pamphlets prepared by a committee of the Woman's City Club with the hope of bringing before the League "a vivid picture of the history and present structure and functions of the city government and its several departments." Among the titles of these studies in local civics are "The Cincinnati Council," "The Fire Department of Cincinnati," "The City's Water-Supply," "Selected Ordinances," "The Cincinnati Health Department," "Art in Cincinnati," "Cincinnati as a Musical Center," "The Industrial Life of Cincinnati," and a series on vocational subjects.

Two years ago Principal Edmund D. Lyons of the Hughes High School inaugurated a senior sponsor system. In this plan each English class of the Freshman grade constitutes a section of a civic club. The English teachers supervise the work, and a senior student is sponsor for each section. The sponsors and section chairman compose an executive committee which looks after the general management of the club and its sections. Occasionally assembly meetings of the thirty sections in the auditorium help to develop community coöperation and spirit.

The sponsor system in a variety of forms is being introduced into all of the city secondary schools. The officers of the League and the chairmen of the standing committees are chosen from the high schools, the President being a senior sponsor. One of the chief aims of the League is to develop leaders — future presidents of the Chamber of Commerce, the Board of Education, or the Woman's City Club. The boys and girls are being taught that it is in groups that people make their efforts most effective; that those who are to take a worthy part in the life and work of the world in the great reconstruction period must know how to work thru organization.

Parliamentary drill is a very valuable feature of the League work. Mrs. Ben Lowenstein, leader of the parliamentary practice classes of the Woman's City Club, and an expert in parliamentary procedure, instructs the Board of Directors of the League. A simplified parliamentary manual based on Roberts' "Rules of Order" is in course of preparation in the Hughes High School.

The Chamber of Commerce has entertained the members of the Board of Education, the Superintendent, Assistant Superintendents, principals and teachers in charge of Civic and Vocational League clubs at an annual civic dinner for the last three years, soon after the opening of the schools in the fall. One of the most helpful phases of the League movement from the vocational point of view is the fine spirit of coöperation and good fellowship increasingly manifested between the Chamber of Commerce and the principals and teachers. During the last year the following departments of public and private work were represented in the list of speakers before groups of the constituent clubs: the Municipal and Federal Governments, the Juvenile Court, the Fuel and Food Administrations, the Home Guard, the legal fraternity, architecture, agriculture, manufacturing, baking, publishing, and the press.

Many members of the Chamber of Commerce contribute to the fund for publishing the *League Herald*, the official organ of the League and the medium of communication between its Board of Directors and the constituent clubs. Other members have lent their automobiles for the "Know Your City" excursions made by the youthful club members to points of interest in the down-town district for the purpose of gaining an understanding of their city, its topography, extent, industry and commerce, its social institutions and its beauty.

This helpfulness in the League work on the part of adults and the encouraging outlook for the affiliation of private and parochial schools in the movement and the organization of an Ohio Federation of Leagues, together with the fact that the League boys and girls are showing by deeds the mastery of the spirit of good citizenship, warrants the statement that the League is strengthening the foundations of this democratic government, where the children of many nations are united under the American flag.

FORWARD STEPS
REPORTED TO THE AMERICAN CITY
BY MUNICIPAL OFFICIALS & DEPARTMENT HEADS

For this department the editors will welcome articles on subjects of interest and practical value to others from city, town and county officials and heads of departments engaged in similar work. Photographs, or other illustrative material, should accompany the articles whenever available.

MAYORS

New Breakwater Will Make Lake Shore Drive

RACINE, WIS.— Plans have been completed for the construction of a long breakwater about 660 feet out from the present lake shore line of Racine. The breakwater is to be a rubble mound constructed as shown in the accompanying illustration. The property owners on the lake shore are deeding their riparian rights to the city. We intend that the space beween the present shore line and the breakwater shall be filled in and used for park purposes.

The first breakwater will extend from the mouth of our harbor south to the city limits, a distance of about three miles, and the cost will be approximately $750,000 for this section. Based upon prices that we have been paying for lake shore park property, we estimate the value of the property that will be made to be in the neighborhood of $2,000,000.

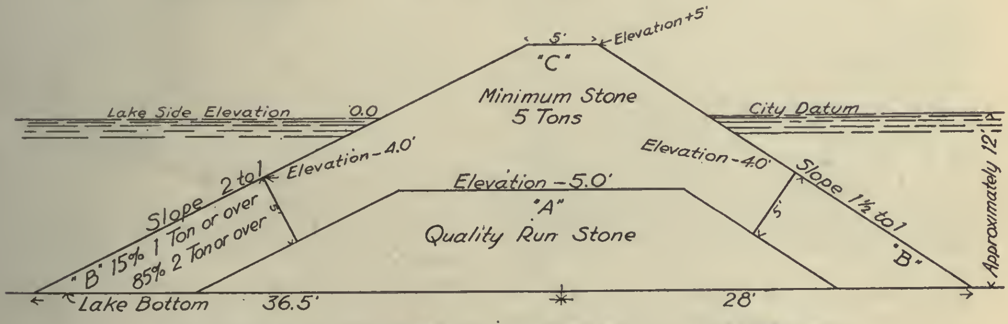
When the breakwater is constructed, we shall be able to have a lake shore drive extending along the entire water front of our city, a distance of approximately six miles. The contract has been let for the first section of 2,500 feet, a goodly portion of which we expect will be finished before the end of the present working year.

WILLIAM H. ARMSTRONG,
Mayor.

CITY MANAGERS

Electric Lighting Cables Placed Underground Before Paving is Started

GLENCOE, ILL.— In order to eliminate additional expense and to make a quick, clean job, it was decided to place underground all the wires for street lighting in Glencoe. This brought up a second problem when we were about to lay a 54-foot brick pavement with concrete base in the business district. The special assessment for this pavement had been confirmed by the court before a study of the elimination of overhead wires was made.



CROSS-SECTION OF BREAKWATER SOON TO BE BUILT AT RACINE, WIS.

SCENE ON PARK AVE., GLENCOE ILL., SHOWING LIGHTING STANDARDS

Brick street, 54 feet wide, with light posts having single ornamental globe. Note the absence of overhead wires, and the full-width sidewalks on each side of the street

Very quick action was necessary in order that the actual work of paving should not be delayed.

Coincident with the assessment for paving, an assessment for sidewalks was made in the same district. The sidewalks led down from the store front or property lines to the curb. Naturally there would have been no chance when this work was in place to eliminate poles and put the wires underground, because of the rigid nature of the pavement and the walk.

After estimates had been prepared showing the cost of armored or parkway cable laid in 4-inch conduit, one of the members of the Commission, with the Manager, determined to install an ornamental lighting system with adequate provision for present and future needs.

Corporate funds did not contemplate and were insufficient to finance more than 50 per cent of the cost of such installation. It then became incumbent on the Manager and the Commissioner to secure bids for such work and to obtain property consents to cover 50 per cent of the cost. Each took a list of those he felt he could most readily secure as signers to a pledge to pay a certain amount per front foot for a system of ornamental lighting, said payments to be made thirty days after the completion of the work and its approval by the Commissioners. With them they took specifications and drawings showing the approximate location of lights to be installed immediately, and handholes which were to be left ready for use at a future time. A cut of the concrete post and globe and fixture also accompanied the drawing.

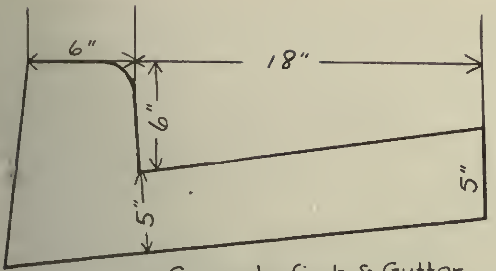
When the individual efforts of either Commissioner or Manager failed or were not quickly productive, they joined hands to expedite matters. A full 100 per cent of signatures were gained in this way, thus authorizing the work to be done at the proper time.

H. H. SHERER,
Village Manager.

CITY ENGINEERS

Keokuk Adopts New Style Concrete Curb

KEOKUK, IOWA.—We have built both the straight curb and the combination gutter and curb in Keokuk within the last sixteen years, and in our experience the combination curb and gutter is the better for all streets except in the strictly business district. The flow line in the combination curb and gutter cleans itself better and more readily than the common gutter, and as there is less street cleaning in the residence portion of the city than in the business section, this style of curb is generally far more satisfactory.



Concrete Curb & Gutter

The combination curb and gutter is more attractive in general than the old style straight curb and hence aids materially in our general attempt to increase the beauty of the city.

We are paying in the neighborhood of 60 cents for the type of combination curb and gutter shown in the illustration, as compared with 60 to 70 cents for the straight curb. The straight curb, however, is preferable in the business districts, as there is so much heavy traffic borne on iron wheels. In the future, however, when trucks completely replace the few remaining horses and iron-tired vehicles, the combination curb and gutter will be used for practically all streets.

J. F. WINTERS,
City Engineer.

CITY CLERKS

Water Storage Increased Without Interrupting Service

OCEAN CITY, MD.—This city is Maryland's only seashore summer resort, and is one of the most popular south of the Jersey capes. It has a normal population of possibly 1,000, which rises to about 10,000 during the summer months.

During the season of 1916 the need of a new water tank became evident, and the Mayor and Council after some little negotiation contracted with the Pittsburgh-Des Moines Steel Company for the erection of a new tank to replace the old one. Continuous service was necessary during the construction of the tank and tower. The reservoir supplies the village with water for domestic use and for fire protection, and the service could not be interrupted for any length of time. There was no other site available, so the engineer designed a new structure to be erected upon the same foundations.

The new tower, the first ring of the tank, and the tank bottom were first erected inside the old tower. Then at a time in the day when the pumps could adequately take care of the supply, the old riser pipe was cut, the new saucer plate with a new expansion joint slipped in and the pipe connected again. Service was continued, using the partly completed new tank. The old tank and tower were then torn down and the new tank completed with no further interruption.

This new tank measures 110 feet from the top of the four cement foundation piers to the top ring of the cylinder; the cylinder rests upon four columns 66 feet and 9 inches high, the cylinder being 43 feet 3 inches high, with a diameter of 17 feet and a total capacity of 81,000 gallons, and gives a gravity pressure of about 48 pounds to the square inch.

Past experience had proved the necessity of a covering over the tank, and the new tank was equipped with a steel roof. This tank is

NEW STEEL WATER TANK AND TOWER ERECTED IN OCEAN CITY, MD., WITHOUT INTERRUPTING THE SERVICE now supplied with water by an electrically driven pump of the 4-plunger type, which will under normal conditions fill the tank completely in three hours. The total cost of the tank was approximately $6,000 and the old steel from the old structure.

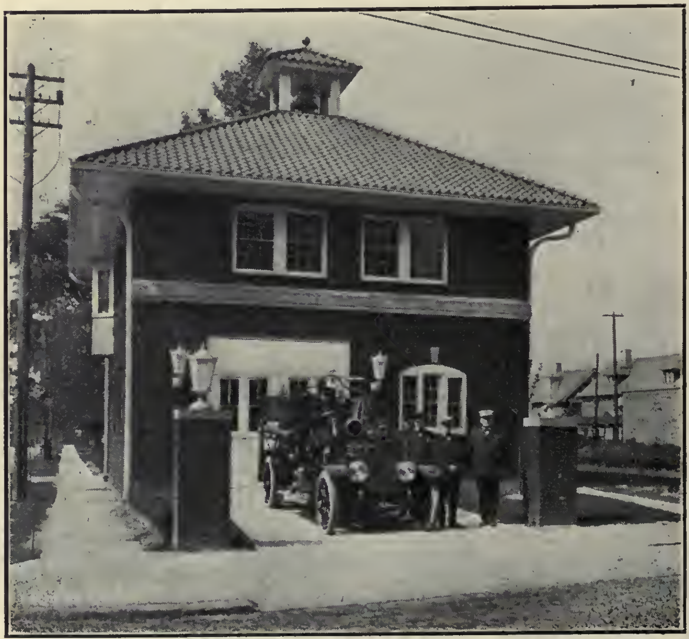
This form of construction has given us complete satisfaction in a location within 200 feet of the ocean, where high winds may be expected and corrosion is rapid.

E. E. COLLINS,
Secretary, City Council.

FIRE DEPARTMENTS

An Attractive New Fire Station

Lakewood, Ohio.—A new engine house which has recently been completed here embodies all the present-day ideas of modern engine house construction. The house stands on the corner of Kenilworth Street and Detroit Avenue, and business houses and residents were at first strongly opposed to the erection of a fire station in the neighborhood. However, every detail of construction has provided so well for all conditions that this engine house with its well-kept grounds is now a show spot.



NEW FIRE STATION, LAKEWOOD OHIO,

The house stands on a lot 64 by 160 feet, and is set well back from the street. A concrete driveway leading up to the house is provided with a drain so that wash water cannot run across the sidewalk. The house is surrounded by a well-kept lawn hedged with California privet. Flower beds and rose bushes make the plot most attractive and park-like.

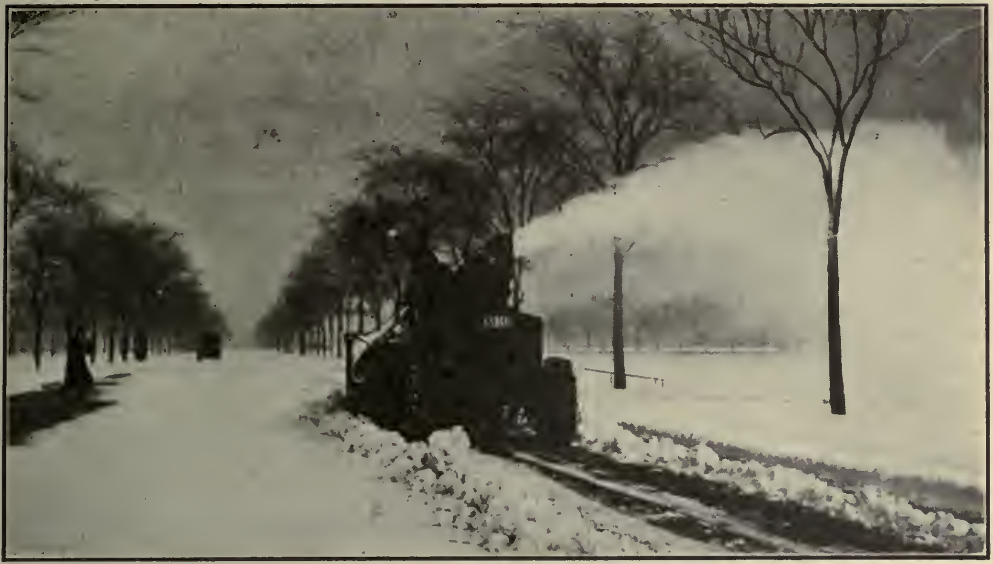
The first floor is built in one large room approximately 36 by 46 feet. At one side is the stand for the apparatus, with concrete wash-rack. Lockers are provided on this floor for each man, and for his entertainment public-spirited citizens have donated a piano and Victrola. The interior of the entire house is in white tile, easy to keep clean and sanitary. The first floor also has a drinking fountain and wash-stand for the men.

The basement is well lighted and ventilated and provides space for a billiard-room, a work-room with lockers for the working clothes of the men, a kitchenette with dishes and cupboards, and an enclosed room for the hot water heating plant and coal bins. All wiring comes into the basement in conduit so that no outside wires mar the appearance of the house. On the second floor is a dormitory, captain's room, tiled bath room with marble shower-baths, and a library with bookcases and card tables.

A hose tower runs from the basement to the roof, well ventilated so that the hose dries quickly. The house is provided with a ventilating system that will change the air every three minutes. The lighting system is connected with the alarm circuit so that all lights go on when an alarm comes in, and are put out when the front doors open. There are bells in every room and in the basement.

The apparatus housed in this station consists of our American-La France combination pumper and hose wagon, which is the most recent addition to the fleet of motor fire apparatus that has proved so successful in reducing the fire losses in Lakewood.

JOSEPH H. SPEDDY,
Fire Chief.



ROTARY SNOW-PLOW OPERATED BY THE SOUTH PARK COMMISSIONERS, CHICAGO

PARK DEPARTMENTS

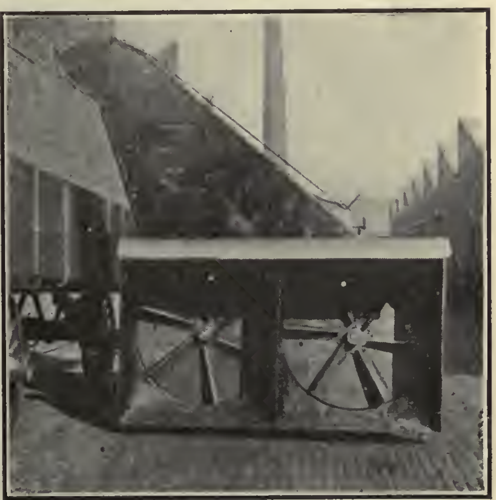
Shooting Snow from the Highways

Chicago, Ill.— To quickly and thoroly remove moderate falls of snow from the highways the South Park Commissioners of Chicago last winter devised a rotary snow plow. This was not used during the winter months because the amount of snow which fell was unusually small. Early in March, however, a fall of sufficient depth occurred so that with the use of scrapers, it was piled up and a very satisfactory test was made of the machine.

The snow was about seven inches deep on the driveway and by means of scrapers was plowed into a window seven or eight feet wide and averaging two feet deep, along one side of the driveway; the rotary plow was then used to throw this snow onto the lawn area along the drive. The machine was driven at about three miles per hour, and successfully handled all the snow, which was quite soggy and heavy at that time.

This snow plow consists of two rotary discs 40 inches in diameter, surrounded by a sheet steel housing forming a scoop 7 feet wide by 4 feet high. Curved blades are secured to the discs and are designed to discharge snow from the periphery of the discs thru the chute, which is 7 feet high. The discs are driven at a speed of 300 to 400 revolutions per minute by a 38-h. p. Kelly truck engine with Whitney chains and sprockets.

At the top of the chute a short spout or diverter is employed to direct the discharge of the snow at any desired angle, which makes it possible to throw snow directly into a wagon or truck or to shoot



ROTARY SNOW-PLOW, SHOWING DETAILS OF CONSTRUCTION, CHICAGO, ILL.

it to a considerable height over onto adjoining lawns and fields. The complete mechanism mounted on an oak frame is balanced on a front axle so that by means of a hand wheel a slight effort will permit the raising or lowering of the scoop from the operator's seat on the three-wheeled tractor hitched to the plow.

The engine clutch is operated by a hand lever placed at the left of the operator's seat, and the engine throttle is actuated by means of a rod extended to the operator's seat. Steering is provided by a series of levers below the frame connecting the steering wheels of the tractor with the wheels on the front axle.

Two men are required to operate this machine, one attending to the tractor while the other takes care of the plow operation. Unfortunately, the plow was not completed in time to get a very thoro tryout, altho several trial runs were made under adverse conditions. The work done was ample to give a fair conception of what might be expected under more favorable conditions, and it is believed that this equipment will encounter no difficulty in cutting thru snow drifts up to four feet in depth, the speed depending upon the depth and density of the snow encountered.

The plow can be adapted for use as a loader in places where snow must be carted away in wagons, as the discharge from the spout can easily be diverted into a wagon driven alongside the machine, and a load may be obtained in a very short time. The present systems of loading by hand are very slow and expensive owing to the scarcity and high cost of labor. The machine will be very valuable in the removal of snow from country highways where the snow can be thrown over into adjoining fields for a distance of 30 to 50 feet.

FRANK BRUEGGEMAN,
Mechanical and Electrical Engineer, South Park Commissioners.

PUBLIC WELFARE - AND SERVICE -

Municipal Greenhouse Furnishes Dayton Over 100,000 Plants Annually

Dayton, Ohio.—The municipal greenhouse in Dayton was built in 1915 at a cost of $1,300. The dimensions of the building at that time were 42 x 50 feet, making an area of 2,100 square feet, which included a workshop and tool-house. Underneath the tool-house there is a cellar, in which the boiler is located. The ground was prepared almost entirely by the patrons

MUNICIPAL GREENHOUSE IN DAYTON, OHIO, WHICH SUPPLIES THE PLANTS FOR CITY PARKS, SCHOOL GARDENS AND BRIDGE BOXES, BESIDES FLOWERS FOR THE SICK POOR of the municipal lodging house. The excavation work, cement foundation work and common labor were provided from the workhouse. Most of the lumber used was waste, hence the low cost of constructing the original building.

At that time the city had less than 50 acres of park and boulevard area needing plant decoration. In 1916 the Greater Dayton Association, thru private subscriptions, instituted the placing of flower boxes on the bridges. These required about 20,000 plants. The park and boulevard area required about 25,000 plants. Anticipating increased park area and also realizing that the Greater Dayton Association would in all probability expect the Welfare Department of the city to take over bridge planting in 1917, the capacity of the greenhouse was extended in the winter of 1916-1917 to cover 4,725 square feet of floor space. This addition cost about $1,200 making the total cost of the greenhouse $2,500.

The bridge box planting has been kept up regularly. This requires about 30,000 to 35,000 plants each season. The greenhouse supplies all these plants and has also supplied 19,000 tomato and 19,000 cabbage plants for distribution among the school children, for school gardens. In addition, from 35,000 to 40,000 plants are used on the present park area of the city, the acreage having increased from less than 50 acres in 1915 to 520 acres in 1919. The greenhouse also supplied during the months of November and December, 1918, 139 dozen chrysanthemums to the visiting nurses of the Welfare Department for distribution in the homes of the sick poor. This public service was most highly appreciated by the sick and the shut-ins. We expect this winter to double the number of chrysanthemums furnished for this purpose.

Not including the cost of supervision by the Superintendent of Parks, the greenhouse is maintained at a net cost to the city of about $1,700. The gross cost is reduced by the sale of surplus plants to the dealers at the end of the season. We now anticipate the necessity of providing very soon a larger greenhouse to meet the needs of our growing city and our increaspark acreage.

D. FRANK GARLAND,
Director of Public Welfare.

RECREATION - - DEPARTMENTS

Playground Attendance in 1919 Nearly Double Spokane's Best Previous Total

Spokane, Wash.— During the season of 1919 the Spokane municipal playgrounds enjoyed the largest attendance since their establishment by the Spokane Board of Park Commissioners. In 1918 the attendance was much lower than in former years, and the tennis

SOME OF SPOKANE'S YOUNGSTERS ON THE A. M. CANNON PLAYGROUND

COOLING OFF IN THE BIG CITY POOL AT THE SINTO TRIANGLE PLAYGROUND, SPOKANE, WASH.

courts and the baseball fields were much less used. We attributed this to war conditions, for during the 1919 season there was a larger general playground attendance and the tennis courts and baseball fields were used more than ever.

The increased attendance was most strikingly shown at the Sinto Triangle Playground, which is the only playground having swimming pools. This year 198,862 persons visited the playground, and of this number 142,365 entered the water. Last year the number of persons who used the pool was 85,383. During the 1919 season 1,352 persons were taught to swim by the lifeguards.

The accompanying illustrations show the youngsters on the A. M. Cannon Playground and some of the bathers in one big swimming pool, which measures 140 x 180 feet.

All the organized playground activities were entered into this year in much greater numbers, and our total attendance record of 932,318 for the season from May 1 to August 31 for the eight supervised playgrounds, is nearly double that of any former season.

BENJAMIN A. CLARK,
Supervisor of Playgrounds.

PUBLIC WORKS - DEPARTMENTS

H. C. L.

Detroit, Mich.—The letters H. C. L. have a double significance to the central station operator. It is not only the high cost of living that bothers him, but with the continuously increasing expenditure for everything that enters into the cost of the service, the High Cost of Lighting, or of the service from the station, has assumed such proportions that those in charge of public lighting plants must curtail all expenditures to the minimum.

In this endeavor the city of Detroit, with 11,831 arc lamps in operation, has, by the change of the dash-pot lifter in the General Electric Company's Form 3 luminous arc lamps, been able to reduce the average wattage of more than 7,000 4-ampere lamps in outlying districts from 310 to approximately 270 watts. This has been accomplished by reducing the length of the arc, and the potential across the arc to an average of about 68 volts.

In order to make this reduction of the length of the arc possible without too much of a decrease in light, a flat electrode is used, giving an assymetrical distribution such that in the direction of the street it is impossible to distinguish the difference in the lighting without photometric test. Then by substituting an 11/16-inch diameter electrode, flattened, for the ⅝-inch round, a life of trim of 270 hours is secured.

An equally valuable feature of this change is that it has permitted the addition of about 15 arc lamps to each circuit without the expense of additional rectifiers or arc circuits.

F. MISTERSKY,
General Superintendent, Public Lighting Commission.

Waste Water from Ice Plant Irrigates Park

McPHERSON, KANS.—The lake in Central Park, McPherson, is supplied with waste water from the ice plant two and a half blocks distant, thru a 2-inch galvanized iron pipe. In 1918 a 3-foot concrete wall, 4 inches in thickness with expansion joints about every 10 feet, was built around this lake. The top of the wall extends 6 inches above the level of the ground, forming a fine curbing around the lake and also making it possible to use the waste water for the subirrigation plant.

The bottom of the lake is not concreted. The subirrigation lines which are run to the various flower beds are of 3-inch tile a foot long without bell, which lets the water come thru the joints and makes it possible to flood the lawn when desired. The water-supply to these pipes can of course be turned off and on as needed. The pipes are placed about 18 inches below the surface.

There is a small island in this lake, where we have planted willow trees, shrubbery and flower, which make a very picturesque appearance. Ducks and swans in the lake are also a feature of considerable interest to the public, especially to the children.

J. W. JENKINS,
Commissioner of Streets and Public Utilities.

GETTING THE MOST OUT OF WATER
From Ice Plant to Park Lawns by way of this charming little Lake, Central Park, McPherson, Kans.

Reduction in Living Cost a Municipal Job

By Emerson P. Harris

The city father seeking to do his part toward reducing the cost of living can find the really big job in his own town. For there is no doubt that the most promising place in which to look for permanent reduction in the cost of living is that of reform in retailing and wholesaling. It is quite possible that municipal governments should have an important hand in such reform.

What the Consumer Pays For

What we pay at retail for our family supplies is divided about equally between the producer and the distributer; that is, the consumer pays at the place of consumption two dollars for what, at the place of production, the producer gets one dollar. The work performed by the producer is much more efficiently done than is distribution. There is hot dispute as to the division between capital and labor of the dollar which pays for production, and there are demands being made by labor which, if granted, must be met by the consumer; but there is nothing like the downright waste in production that there is in distribution.

Of the consumer's dollar which goes to pay for distribution, we may say that approximately one-third goes to brokers, railroads, truckmen, warehousemen, etc., before the product reaches the wholesaler. The other two-thirds of the cost of distribution goes to the wholesaler and the retailer. Judging from the variation in the cost of performing the services of the wholesaler and the retailer in different localities, and in different stores, and also by examination of the factors of expense which make up the charges for these two final steps in distribution, it is fair to estimate that one-half the average burden now borne by consumers for wholesaling and retailing could be saved. This would reduce the cost of living by one-sixth and release an immense amount of labor power which could be turned to production.

Analysis of Retail and Wholesale Costs

The three chief causes of the excessive cost of purveying family supplies are the lack of sufficient volume per store to make economy possible, lack of training and efficiency on the part of store managers, and a lack of effective competition. No one needs to be told that there are in almost every town several times as many stores as are needed to perform the work of serving supplies to the people of that town. All expenses of these stores, employing together perhaps double the help, and calling for more than double the rent, capital, and other overhead charges that would be necessary with the work properly organized, must be paid by the consumers.

If space permitted, we would give an analysis of expenses which would show that the heavy expenses in running a store are those incurred to *get ready* to serve customers. Three times the number of stores are those incurred to *get ready* to serve people that would be necessary to serve the same people and sell the same goods in larger and more dependable volume per store. If competition did what it was once supposed to do, the less efficient dealers and less advantageous stores at which to buy would be eliminated. As a matter of fact, competition does not adequately protect the consumer as between two stores, but does cause an excessive number of stores, which makes retailing very expensive.

As to efficiency, the work of local purveying is done in such small units that a high degree of skill is out of the question by reason of the low compensation to managers. The conduct of a food store is a highly technical business requiring study, skill and good judgment, but probably most grocery owners get less than $1,000 a year clear for their own services.

There is great need of real, effective competition. When it comes to judging between the quality and prices of a thousand articles of varying grades, sizes of packages, etc., no housewife can rely upon her own judgment as against the trick of the skillful juggler who marks low the few articles with which she feels familiar, and recoups on the scores of articles and brands of which she knows nothing. There is a certain rough assurance in competition, but, all in all, is not the consumer oftener fooled by it than helped?

What is said of retailing is largely true of wholesaling. The wholesaler whose gross profit* ranges from 7.7 per cent to 17.2 is engaged largely in persuading retailers to buy of him. About one-third of his expenses is incurred to push his goods upon the buyer. There are other expenses which do the consumer no good, like the losses for bad debts. The larger retailers, like the chain store, are coming to be their own jobbers, which service they can undoubtedly perform for half what the wholesalers charge the retailers for the work.

The Concession Contract Plan

What is the way out? After studying this problem for many years and concluding that it will take a long period of education and perhaps privation to enable consumers to conduct coöperative stores to such an extent as to be of any general advantage, I believe the most promising plan at this moment is what may be called the concession contract plan. By this I mean, to restrict the number of stores in a community to the number required to perform the purveying service to the best advantage, and to lease the privileges to the responsible dealers who will distribute the supplies from original sources at the lowest average gross profit. Carrying out this idea would involve the solicitation of bids from a sufficient number of responsible and otherwise eligible companies which were in a position to buy at first hand, thus performing their own wholesaling as well as retailing. The request for bids would state approximately the population to be supplied and give such other facts as would make intelligent bidding possible. Especially would the extent of service to be performed be a part of the arrangement; that is, whether delivery of goods was to be included in the service covered by the gross profit agreed upon, or was to be a separate charge.

Bids would not give prices, but the maximum percentage of gross profit on total sales at which the goods would be furnished. The purchase price should be the most reliable quotation in primary markets, specific price current to be agreed to in contract; and the retail should be the monthly, quarterly or annual sales. Thus, if the percentage of profit quoted were 18 per cent of the selling price, goods which cost $820 at source should not be sold to consumers at prices to bring more than $1,000.

The contract would stipulate the way in which the municipality would have books audited to insure that the profit agreed to had not been exceeded. The arrangement under which the contract was to be terminated at its expiration if not renewed, should be clearly set forth.

Such an arrangement properly carried out would insure real competition and not the confusing pretense in which the consumer is supposed to compare the average prices of hundreds of items, or go from store to store, trying to pick out the items which each was selling cheapest.

Dealings with bidders would relate to large amounts, usually hundreds of thousands and often millions of dollars worth of goods per year, and would enlist the interest and command the serious attention of important merchandizing concerns. The service could be kept in the hands of experienced merchandizers whose competency had been fully demonstrated, and would insure the low prices made possible by assured volume and the absence of necessity to divert effort and expense to persuading people to buy at one store rather than another.

In cases where there was more than one licensee in the same territory, there would be no chance for rivalry as to average prices, since these are virtually fixed by contract, and such being the case, there would likely be a fair degree of uniformity as to the prices of specific articles. At all events, the aim would be to save the expense of all useless aggressiveness on the part of dealers, on the one hand, and to contribute to customers that peace of mind which would come from the knowledge that average profits were an open book and that all possibility of extortion was done away with.

Consumers Should Understand Official Audit

The municipal supervision of such a service should not only insure that the specified cost to get goods from producers to the store counter was not being exceeded, but should also include such inspection of quality and purity as seemed feasible. In other words, the municipal supervisors should act in behalf of consumers as far as practicable. Above all, complete publicity should be given to the financial findings of the auditors so that consumers should know exactly the cost of distributing their goods. When such figures of gross profit came to be understood by consumers, they would mean much; whereas the profit upon a single article has really no significance to the layman as business is now conducted.

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* Report of Harvard Graduate School of Business Research.

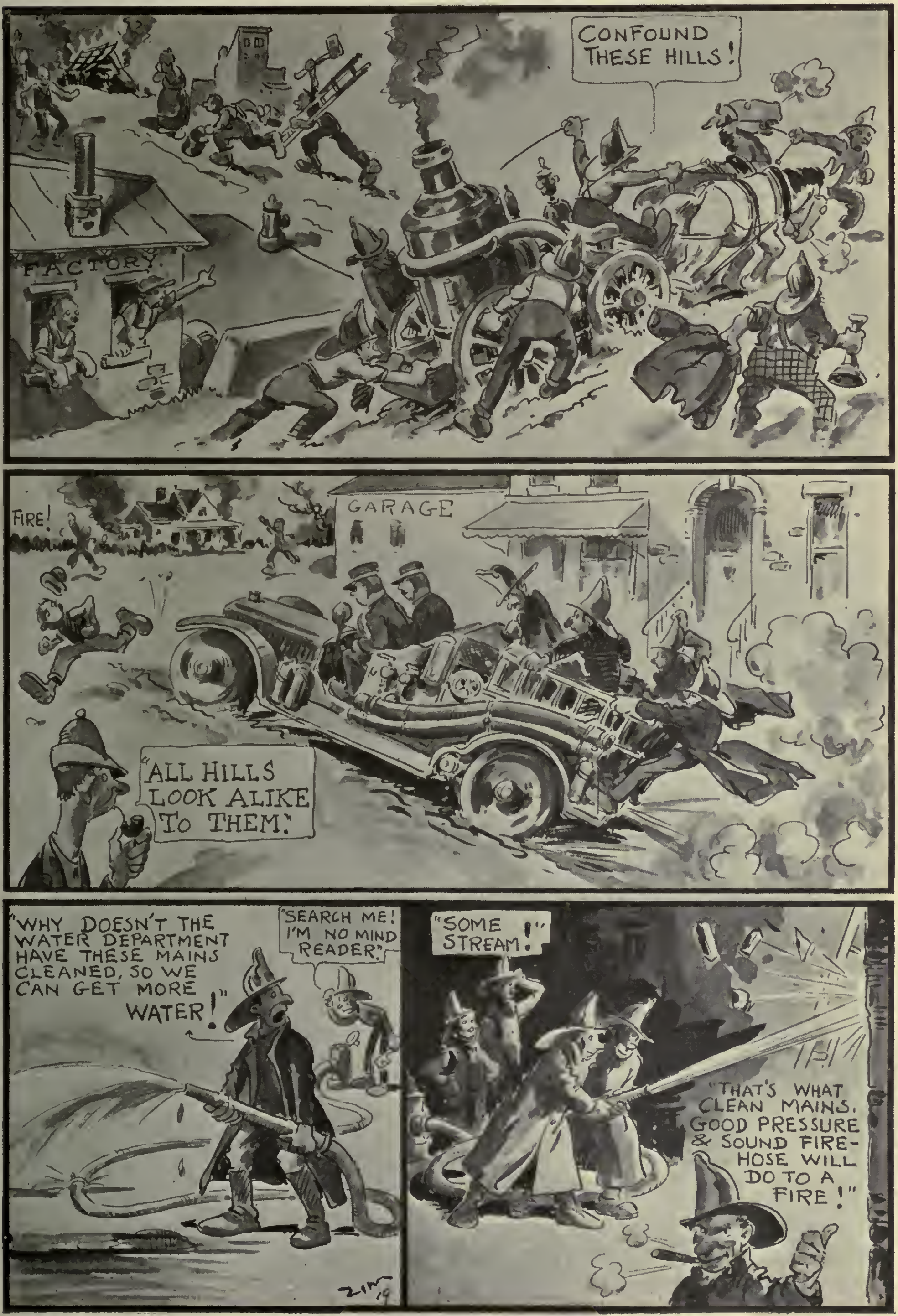
If a consumer learns that the gross retail profit on sugar is 5 per cent, on dried beans 20 per cent, and on spices 40 per cent in the same store, it is merely confusing. When she learns that the cost of retailing is, say, 20 per cent, and that spices and some other things must be sold at 40 per cent profit to make up the loss on sugar, flour and some other articles, she sees that the whole thing is a maze which it is hopeless for her to try to follow. If, on the other hand, she is assured by official audit that of each $10 bill of groceries she buys, she has to pay only $1.80 to bring the goods from the producer, take care of them until she calls, and then serve them out, she gets a definite idea, and an idea which is destined to become gratifying when she learns that under other conditions the same service would have cost her twice as much, making her bill $11.80.

That the near end is the place at which to begin on the high cost of living is apparent when we come to note the wide discrepancy between the cost of foods in the different localities. The last report on living costs of the New Jersey Bureau of Industrial Statistics gave the total cost of a certain bill of foodstuffs in seventy different towns in the state. This bill of some forty articles cost at Califon $11.28, whereas the consumer at New Brunswick had to pay $18.96, the average cost in the seventy towns being $15.86. The Harvard Graduate School of Business Research finds that some retailers get 27.9 per cent gross profit, while others get only 14.6 per cent; and that wholesale dealers sometimes average only 7.7 per cent gross profit, while others get 17.2 per cent. Is it not a proper subject of inquiry on the part of the governing body of any town whether its consumers are paying these top costs for the purveying of their family supplies?

It seems quite possible that the time may come when municipalities will see fully as much reason for the supervision of the food supply of a town as is now seen for the regulation of water, light and trolley service; this especially as, from the financial standpoint, the food supply is so much more important. It is believed that this plan would bring about a condition of large turnover by which distribution could be performed at a minimum of expense, would insure real efficiency, make possible full, free and effective competition, save consumers from 10 to 15 per cent, and set free a large amount of capital and labor for productive purposes.

The legal obstacles in the way of restricting the number of stores so as to reduce the cost of retailing would be different in different states. An easy way to test out the plan would be its trial by mining or other industrial companies which own all the real estate in their vicinity and are thus in a position to limit and choose dealers. Probably the most conservative tests would be made with staple food products.

Solving the Troubles of the Fire Department


CONFOUND THESE HILLS!
FACTORY
FIRE!
GARAGE
"ALL HILLS LOOK ALIKE TO THEM."
"WHY DOESN'T THE WATER DEPARTMENT HAVE THESE MAINS CLEANED, SO WE CAN GET MORE WATER!"
"SEARCH ME! I'M NO MIND READER."
"SOME STREAM!"
"THAT'S WHAT CLEAN MAINS, GOOD PRESSURE & SOUND FIRE-HOSE WILL DO TO A FIRE!"
ZIM 19

Cartoon drawn specially for The American City by Zim

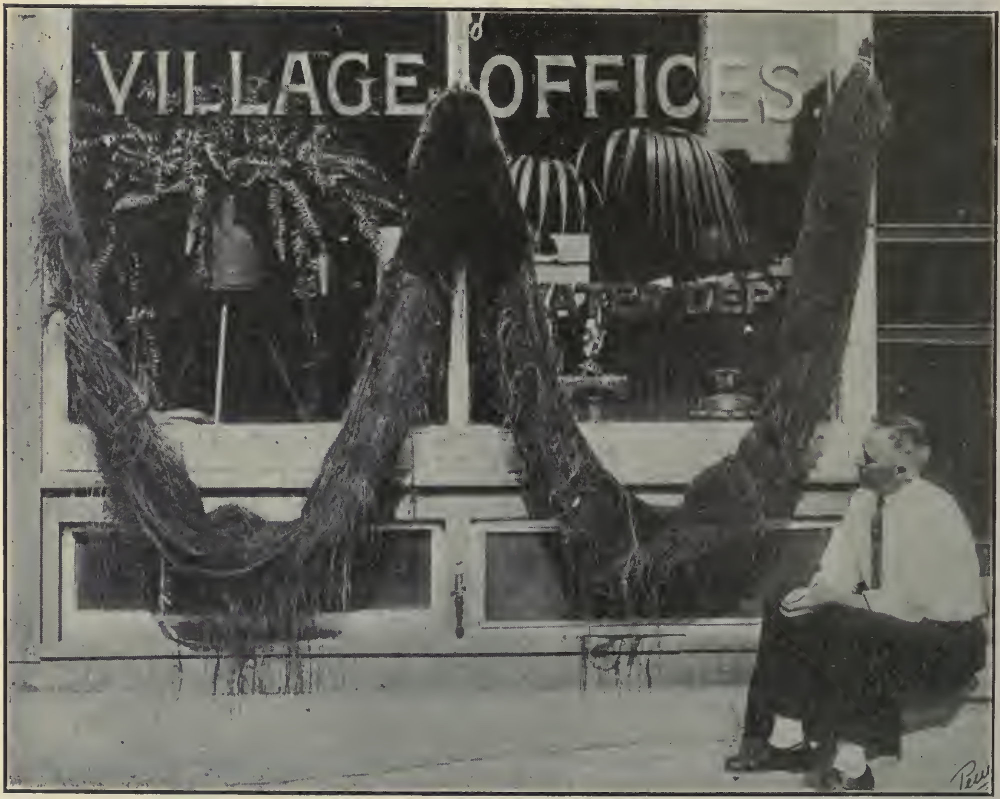
Willow Root, 24 Feet Long, Is Taken from a 10-inch Wooden Water-Main

The accompanying cut shows a willow root, 24 feet long, taken out of a 10-inch water-main of the Avon Water-Works at Lakeville, N. Y. It was fed from a root about the size of a lead pencil, which came from a willow tree, 3 feet in diameter, growing near the water line.

The root entered the pipe thru a wooden plug which was driven about twenty years ago, and it is thought that a very small fiber or tendril of the root was driven in with the plug at that time. This same condition would occur with any other water conduit, where a wooden plug had been driven into it. The wooden conduit, altho laid from 20 to 30 years ago, is in excellent condition except that the iron bands with which the pipe is spirally wound are almost entirely rusted away.

Last fall it was noticed that the water pressure at the chlorine plant at Millville, which is over a mile from where the root was taken out, was not up to normal. The cause was attributed to a leak in the conduit between that point and the reservoirs, or possibly to a leak between the chlorine plant and Lakeville, or a stoppage between the two latter places.

A leak in certain places would be difficult to locate, as the conduit follows closely the Conesus Lake outlet, crossing it thirteen times from the lake to Avon, a distance of over 8 miles. Tests were made with coloring fluid, and the creek crossings were closely watched without discovering any leaks. The Water Commissioners and the Superintendent therefore decided that the source of trouble was above the chlorine plant at Millville. Tests were made, levels were taken from the chlorine plant to the lake, and the stoppage was located and the root removed. The big root shut off approximately two-thirds of the



GIANT WILLOW ROOT REMOVED FROM A 10-INCH WOODEN WATER-MAIN OF THE AVON, N. Y., WATER-WORKS supply of water, and had been growing in the pipe for years.

As the conduit was located very near the outlet and from 4 to 6 feet below the creek level, work was difficult; but thru the kindness of the Rochester Water-Works, Superintendent William H. Clark was able to borrow a trench pump which took care of the large amount of seepage water which flowed in from the creek. The root was removed from the conduit by sawing only one bevel piece, about 8 by 10 inches, from the top of the pipe, and by fastening a small rope around the head of the root, which was then pulled out by three men.

What Cities Earn and Spend

In 147 of the 227 American cities of more than 30,000 population the excess of expenditures for governmental costs, including interest and outlays for permanent improvements, over revenues during the fiscal year 1918 amounted to $70,923,990, or $3.48 per capita. In the remaining 80 cities the excess of revenues over expenditures was $22,323,060, or $1.60 per capita. Taking the entire 227 cities as a group, the excess of expenditures over revenues amounted to $48,600,930, or $1.42 per capita. Their net indebtedness averaged $77.53 per capita.

These are among the significant facts presented in a report entitled "Financial Statistics of Cities Having a Population of over 30,000: 1918," just issued by Director Sam L. Rogers, of the Bureau of the Census, Department of Commerce.

The total revenues of all the cities during the year were $1,124,094,899; the aggregate expenditures for current expenses and interest, $894,332,392; and the aggregate outlays, $278,363,437.

Of the total revenues, $790,577,487, or 70 per cent, represents receipts from the various kinds of taxes. The bulk of this amount, $705,723,158, was derived from the "general property tax," made up of taxes on real and personal property. Of the remaining receipts from taxes, the largest item, $35,576,383, was derived from taxes on the liquor traffic.

Public Service Enterprises Earned Nearly Double Total of Liquor Taxes

Next to taxes, the source of the largest item of revenue is found in the earnings of public service enterprises, which amounted to $116,494,645. This sum is considerably more than double the amount of payments for expenses of public service enterprises — $55,174,480, thus leaving a net revenue from this source of $61,320,165, which is almost double the amount derived from liquor taxes. The bulk of the earnings of public service enterprises came from water-supply systems, from which the receipts aggregated $90,139,705.

Another important source of revenue consisted of special assessments and special charges — the bulk of which were for outlays — aggregating $72,673,785.

For all the cities taken as a whole the per capita receipts from property taxes amounted to $21.03; from other taxes, $2.00; from earnings of public service enterprises $3.39; from special assessments and special charges for outlays, $2.12; and from all other sources combined, $4.20.

The expenditures during the year for governmental costs in these 227 cities, which aggregated $1,172,695,829, were, in the order of their importance:

For expenses of general departments (legislative, executive and judicial establishments, schools, police and fire departments, sanitation, etc.)	$690,160,283
For outlays	278,363,437
For interest on indebtedness......	148,997,629
For expenses of public-service enterprises (water-supply systems, electric light and power systems, docks, wharves, landings, etc.)...	55,174,480

For the 227 cities taken together, the payments for governmental costs, including interest and outlays, averaged $34.16 per capita and exceeded the revenues by $48,600,930, or $1.42 per capita; but the revenues exceeded the payments for current expenses and interest by $229,762,507, an amount equal to four-fifths of the total outlays, which aggregated $278,363,437. *In other words, the cities over 30,000, taken as a group, are paying from their revenues all their current departmental expenses and interest and four-fifths of their outlays.*

In all but four cities the revenue receipts exceeded the payments for current governmental expenses and interest; and in 80, or 35 per cent of the total number covered by the report — including the larger cities of New York, St. Louis, Pittsburgh, Los Angeles, Washington, Portland, and Denver — the revenues exceeded the entire expenditures for governmental costs, including interest and outlays.

The Relative Sanitary Values of Different Types of Drinking Fountains

Part I — The Results of Tests of Vertical-Nozzle Types

By Louis V. Dieter
Bacteriologist, Health Department, District of Columbia

About ten or twelve years ago the first "bubble" drinking fountain was placed upon the market. Its advent was regarded as eliminating all the evils of the common drinking cup. No more would we be menaced by the invisible enemies of mankind—the pathogenic bacteria dislodged from the lips of the tuberculous, the syphilitic, the diphtheritic, awaiting their opportunity to take up their abode in the system of the next unsuspecting drinker. Without further recommendation than its newness, its more or less artistic beauty, the glowing statements as to its sanitary value, probably without one single serious test as to its real virtues, it was accepted on its face value by nearly all municipalities as the solution of the drinking cup problem. It is true that the literature on the subject does not show that it has ever been definitely recommended by any sanitarian or public health official, nevertheless its use has been almost universal. No town with a water-supply is too small or isolated to have its bubble-fountain. This type of fountain has found its way to our railroad stations, our schools and parks, and even to our trains. From an inverted water spigot it has grown to the hundred and one types now on the market, all differing in one or more minor characteristics as to shape or construction, but, as will be shown, all having about the same value from a sanitary standpoint.

An Awakening

After nine or ten years of uninterrupted bubble fountain popularity, it suddenly dawns upon us, following innumerable epidemics of septic sore throat, diphtheria, influenza, etc., that maybe these fountains are not as sanitary as we thought, and that in all probability they have been an important factor in the spread of disease. With this germ of doubt in our minds, we proceed to make some simple tests, that should have been made at the very beginning. To our amazement we discover that instead of being a protection, our supposedly sanitary substitute for the common drinking cup is distinctly a menace to public health fully as great as the cup itself.

The literature on the bacteriology of these drinking fountains is very sparse and of comparatively recent date.* All the findings have been condemnatory to the vertical-nozzle type fountain, and with just cause. Unfortunately, as Professor Dunlap, of the Iowa State University, has pointed out in his extremely valuable article of THE AMERICAN CITY of May, 1919, little has been reported bearing upon practical and laboratory tests demonstrating clearly the causes underlying the sanitary inefficiency of the present-type fountains. The reports have so far dealt only with tests made on comparatively few fountains, which would leave open the question of faulty design as playing an important part. Then again, the literature is almost wholly deficient in regard to the three problems of paramount importance that have been brought to light during the later investigations of drinking fountains, namely: the methods used by drinkers and their bearing upon the sanitary qualities of any fountain; the danger from finger contamination; and a consideration of all types of fountains on the market.

The Tests

The preliminary examination of several types of drinking fountains in use in the public schools, which was started somewhat over four years ago by the late Dr. Joseph J. Kinyoun, at that time Bacteriologist of the District of Columbia Health Department, and the author, showed at once that a more extensive inquiry was necessary in order to determine whether any of the types on the market really served its purpose as a sanitary fixture. When we began this examination, we believed that there were but few types and that our task would be a simple one. We were very soon disillusioned, however, as shortly after beginning the study we found about thirty separate

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* Pettibone, Bogart and Clark. Jour. Bacteriology, Sept., 1916.
H. A. Whittaker. Public Health Reports, May 11, 1917.

VERTICAL BUBBLER TYPE FOUNTAIN THAT IS PARTICULARLY UNSANITARY
Water from Supply Pipe Bubbles up Thru Waste Water

and distinct types assembled for examination. To this original thirty have been added somewhat over sixty other types from time to time, including about eight or ten so-called side-stream types, until at the present time I am of the opinion that if any fountains have escaped this searching inquiry, it is by no fault of mine but rather my misfortune in not having been able to procure one for test purposes.

All the drinking devices came under the following types: First, those in which the outlet of the water was in a small metal or porcelain bowl, which was always filled, and a stream of water was made to pass up thru the water in the bowl much after the manner of a spring. Second, those which had a catch-basin or bowl surrounding the nozzle and were arranged so that the surplus water was allowed to drain away either rapidly or slowly. Third, those which emitted a stream of water much after the manner of a faucet, the stream being continuous or intermittent, and the nozzle not supposed to come in contact with the mouth of the drinker. In some instances these were supplied with a wire guard. Fourth, those which projected three or more streams of water toward a common center, the point of contact forming a more or less "drinkable" bubble. Fifth, those projecting one or more streams of water at an angle of 15 degrees or more.

The drinking devices were attached to the permanent fixtures in the laboratory so that all parts of these could be thoroly sterilized before the tests were made on each. The device was sterilized and the water turned on and allowed to pass thru for several minutes before the experiment was begun. Check analyses of the water-supply were made in each instance.

Our first tests were made by using a solution of uranin, a powerful aniline dye, detectable in quantities smaller than one part to five million parts of water, but as this method depended too much upon the personal element, that is, the eyesight of the one making the test, twenty-four hour cultures of B. prodigiosus, an organism forming a brilliant red pigment in its growth, were substituted. The samples were then collected in bottles containing sterile glucose bouillon and allowed to incubate at about 25 degrees C. for the development of the organisms and their characteristic pigment. These cultures were employed to ascertain whether or not bacteria when placed on the device would be washed away within a certain length of time.

The first test was made by using a bouillon culture of the organism, with and without sputum, pouring these cultures upon the stream of water being emitted from the nozzle or nozzles of the device, and in such a manner as to simulate as nearly as possible just what happens when a person

VERTICAL BUBBLER SHOWN ABOVE IN USE
Contamination After Use in This Manner
Persists from 24 to 48 Hours

drinking allows the washing from the mouth to fall back upon the supply pipe. The second test was to mix the culture with mucus, saliva and a solution of egg albumin. This mixture closely resembles food and the mucous saliva that might come from a diseased person and is often carried on the fingers and hands of children. The nozzle and such parts of the device as would come in contact with the mouth and fingers of drinkers, were smeared over with this material by means of a sterile cotton swab, the effect being practically what takes place when the mouth or dirty fingers of drinkers come in contact with these parts. Immediately thereafter the water was turned on and examination began.

Each device was tested by both methods with the stream running continuously and with the stream running intermittently. The tests of the water were made at short intervals, beginning at two seconds after contamination, then five seconds, ten seconds, twenty seconds, thirty seconds, one minute, two minutes, three minutes, four minutes, five minutes, one hour, and in some cases after twenty-four and forty-eight hours. This was done in order to determine the earliest possible time when the test germs would disappear. All tests were repeated for confirmation.

As stated previously, the individual members of each group differed somewhat, from the point of mechanical construction, in certain minor characteristics, such as shape and size of nozzle; distance of top of nozzle from top of bowl; number and size of holes in nozzle thru which water entered; number and size of holes in bowl thru which water drained; presence or absence of any bowl or catch-basin; manner in which water entered nozzle, some being constructed in such manner that the water had a swirling or sidewise motion, the theory evidently being that this whirling spray would have a tendency to wash away any contaminating organisms; the presence or absence of a so-called guard, usually consisting of a metal ring; the projection of streams of water thru holes toward a common center, the number of holes varying from three to a dozen or so; the use of copper bronze or porcelain spheres of different sizes, the water bubbling from the center. The size of some of these spheres was such that I have observed children take the entire thing in their mouths while drinking.

Data Resulting From Tests

The following data show the results of tests made on the first four groups of types. These four groups include all the vertical-stream types. Group V, the slanting stream types, will be considered in an article in the December issue of The American City, as they present a newer and somewhat different problem both in peculiarity of construction and results obtained. The methods of testing necessarily had to be modified to meet these changed conditions.

Where several types, differing only in construction, under each group gave practically the same results when tested, they are reported collectively.

Group I was made up of fountains in which the outlet of the water was in a small metal or porcelain bowl which was always filled while in use, and a stream or jet of water was made to pass up thru the waste water in the bowl much after the manner of a spring.

Ten types in this group having no exhaust holes or holes leading back into supply pipes showed organisms present after both tests, lasting from 2 seconds to 48 hours. Twelve types with one or more exhaust holes and bowls emptying in from 20 to 60 seconds when the water was cut off, gave results as follows: on the first test (culture poured on bubble), with stream running continuously positive results from 2 seconds to 1 hour and negative results at 24 and 48 hours, and with the stream running intermittently positive results thru 24 hours and negative results at 48 hours; on the second test (culture with sputum, etc., smeared on parts), with both continuous and intermittent streams positive results thru 24 hours and negative at 48 hours. The six remaining types in this group were those having one or more exhaust holes and a bowl that empties itself in from 2 to 15 seconds when the water is cut off. On both tests and with both continuous and intermittent flow they all gave positive results thru 1 hour and negative results at 24 and 48 hours.

The fountains in Group II had a catch-basin or bowl surrounding the nozzle so arranged that the surplus water was allowed to drain away either slowly or rapidly. The water from the nozzle did not run thru the waste water as in Group I, but the waste water and mucus from the mouth might run back over the nozzle. On the first test twelve types in this group gave with continuous flow positive results thru 4 minutes and negative at 5 minutes, 1 hour, 24 and 48 hours, and

WATER RUNS CONTINUOSLY AT A HEIGHT OF 3 1-2 INCHES IN THIS FOUNTAIN

with intermittent flow positive results only thru 3 minutes. On the second test with both continuous and intermittent flow they gave positive results thru 1 hour and negative at 24 and 48 hours.

Fifteen other types in this group showed organisms present on the first test with continuous flow thru 5 minutes and absent at 10 minutes and thereafter; with intermittent flow the organisms first disappeared at 5 minutes. On the second test of these fifteen types organisms were present thru 1 hour and absent at 24 and 48 hours.

Eight types in this group on the first test first showed negative results at 3 minutes; on the second test with continuous flow the results were positive thru 10 minutes and negative at 1 hour and thereafter, and with intermittent flow positive thru 1 hour and negative at 24 and 48 hours. Two types showed negative at 1 minute with continuous flow and at 20 seconds with intermittent flow on the first test; on the second test they first showed negative at 10 minutes with continuous flow, and with intermittent flow they showed positive at 10 minutes and negative at 1 hour.

Group III was made up of fountains which emitted a stream of water much after the manner of a faucet. The members of this group varied in design from a simply inverted quarter-inch or half-inch pipe to devices made of metal or porcelain and varying considerably in shape and internal construction; some were so arranged that the water entered the nozzle in several different ways, or thru two or more holes, thus giving a swirling motion to the stream as it left the end of the nozzle. A large number of these could be and were, taken either entirely or partly in the mouth during the process of drinking, and even when they were supplied with a so-called guard in the shape of a ring or other device, some drinkers protruded the lips far enough to grasp the nozzle before attempting to drink.

The results of the tests, all of which were run in duplicate, were as follows, giving the time limits of positive and negative results:

Eight types: first test — with continuous flow positive at 5 minutes, negative at 10 minutes, with intermittent flow positive at 3 minutes, negative at 4 minutes; second test — with continuous flow positive at 10 minutes, negative at 15 minutes, with intermittent flow positive at 15 minutes, negative at 1 hour.

Six types: first test — with continuous flow positive at 30 seconds, negative at 1 minute, with intermittent flow positive at 15 seconds, negative at 20 seconds; second test — with continuous flow positive at 10 minutes, negative at 15 minutes, with intermittent flow positive at 15 minutes, negative at 1 hour.

Two types: first test — with continuous flow positive at 1 minute, negative at 2 minutes, with intermittent flow positive at 30 seconds, negative at 1 minute; second test — with continuous flow positive at 5 minutes, negative at 10 minutes, with intermittent flow positive at 10 minutes, negative at 15 minutes.

DRINKER USING FOUNTAIN SHOWN ABOVE

In order to grasp the nozzle with the lips it is necessary to "swallow" the 3½ inch column of water. This is a common method of drinking from this device.

Three types: first test — with continuous flow positive at 30 seconds, negative at 1 minute, with intermittent flow positive at 15 seconds, negative at 20 seconds; second test — with continuous flow positive at 3 minutes, negative at 4 minutes, with intermittent flow positive at 5 minutes, negative at 10 minutes.

Two types (nozzle slanted slightly): first test — with continuous flow positive at 5 seconds, negative at 10 seconds, with intermittent flow positive at 15 seconds, negative at 20 seconds; second test — with continuous flow positive at 3 minutes, negative at 4 minutes, with intermittent flow positive at 4 minutes, negative at 5 minutes.

Two types: first test — with continuous flow positive at 2 minutes, negative at 3 minutes, with intermittent flow positive at 20 seconds, negative at 30 seconds; second test — with continuous flow positive at 3 minutes, negative at 4 minutes, with intermittent flow positive at 4 minutes, negative at 5 minutes.

There were only three fountains in Group IV. The first had a metal ring containing a number of holes, and projected a stream of water towards a common center. On the first test this showed positive results at 20 seconds, negative at 30 seconds with continuous flow, and with intermittent flow it showed positive results immediately after use, and negative at 2 seconds. On the second test, with continuous flow the results were positive at 2 minutes and negative at 3 minutes; while intermittent flow gave a positive 4-minute test and a negative 5-minute test. The second fountain had four holes in a device which projected water towards a common center. This gave the same results on the first test as had the first fountain; on the second test it showed positive results with continuous flow at 4 minutes and negative at 5 minutes, and with intermittent flow organisms were present thru 5 minutes. The third fountain of this group had three holes in a device projecting water towards a common center. It showed positive results with continuous flow at 15 seconds and negative at 20 seconds, and with intermittent flow positive upon immediate test and negative at 2 seconds. On the second test this fountain gave positive results thru 5 minutes with both continuous and intermittent flow, and negative at 10 minutes.

Conclusions from the Tests

In considering the results obtained in the above tests, many surprises and disappointments were experienced. Some of the devices were so crude that we could not expect them to be sanitary; others in which the mechanical principles seemed perfect and the operation beyond criticism, proved after repeated tests to be nearly as bad as the worst.

Further tests made with a view to determining just why the organisms remained so long in the stream yielded some interesting data. It was obvious why this should take place in fountains of the type of Group I, as the organisms falling down in the waste water were continually being carried upward by the stream of water passing thru it. The time required to free a fountain of this type from contaminating organisms was indeterminate and depended entirely on the question of dilution. With the stream running continuously, we found our test organisms at the end of twenty-four hours in the first set, and at the end of one hour in the other two sets. When instead of the straight culture, we poured on the bubble a mixture of the culture and sputum, which more closely resembled the washings from the mouth of a drinker, we found that we could recover the organisms at still longer periods. With the stream running intermittently, the cultures were present at the end of forty-eight hours. How much longer they would have lasted was not determined, as it was considered a waste of valuable time. From an esthetic standpoint alone, the fact that drinkers are being served with one another's sputum is repulsive.

With the fountains of Groups II, III, and IV, it at first puzzled us not a little to determine the cause for the presence of the test organisms in the stream for such a length of time, particularly when the cultures were poured directly on the bubble. That this is due to some extent to organisms "dancing" on the crest of the bubble was clearly demonstrated. Of far greater importance, however, is the fact that, evidently owing to some differences in the velocity of the water in the center and at the periphery of the stream, some of the organisms were carried down toward the nozzle in an eddy. This was true particularly in the case of mouth washings from drinkers always containing more or less viscous sputum, which when carried down to the nozzle became attached to it in threads, and as this substance is insoluble in water, small particles of it together with the adherent bacteria, were continually being washed up into the bubble for some length of time. The method used to determine the presence of the organisms in the stream was to take samples from different parts, of the periphery and center at intervals, with a specially constructed pipette, and inoculate them into glucose bouillon tubes. These results and those of swab cultures made from the nozzle under the same conditions conclusively substantiated our theory. Bad as it is, the amount of mucus that reaches the nozzle in this way and the length of time that contamination persists in the stream in this way, are not as great as the degree of contamination that takes place when the lips and dirty fingers are placed directly on the nozzle.

My experience with drinking fountains of the vertical-nozzle type thus far shows that none of the more or less intricate internal arrangements for swirling the water or allowing it to come from the nozzle in various fancy ways will protect the drinker unless the guards are so constructed that it will be impossible to touch the nozzle either with the mouth or with the fingers, and equally impossible for drippings from the mouth to fall back on the nozzle. Needless to say, none of the fountains that I have examined possessed these features, nor can I conceive of the possibility of constructing one that would be safe. The very fact that water from the mouth must necessarily fall back on the nozzle or at least be carried in the stream for varying lengths of time, would show the futility of the arguments of the advocates of the vertical-type fountain, until we have somehow overcome the law of gravitation and the law governing the propensity of minute particles of matter to be held suspended in or at the top of such a column of water. The asinine and supposedly facetious observation of one of our critics, in an excerpt from a recently published magazine, that the organisms used by Professor Dunlap in his tests must have been endowed with super-gymnastic powers to balance themselves for the length of time they do in the bubble, shows not only painful and abject ignorance of the entire subject, but also the spirit that has kept the drinking fountain in the undeveloped state, from a sanitary standpoint, that it is in to-day. When such critics realize that these devices were originally intended to conserve life and public health and were not merely something to sell and a money-making proposition, we shall find our task a great deal easier.

Editorial Note:—The second part of this article, which discusses in detail the advantages and value of slanting-jet drinking fountains, will appear in the December issue of The American City.

Oregon Provides for the Registration of All Professional Engineers

Act Recently Passed Affects Municipal and County Engineers as Well as Those in Consulting Practice

The Oregon State Legislature has provided in Chapter 381 of the General Laws of 1919 for the registration of all professional engineers, including civil mechanical, electrical, chemical and mining. After January 1, 1920, no engineer can practice his profession in Oregon without being registered by the State Board of Examiners. This means that after the date given no county or municipal engineer can perform the duties of his office without being registered, as every map or official plat must be prepared or approved by a duly registered professional engineer.

Up to January 1, 1920, any engineer who files an application or registration and can show under oath that he has had at least six years' experience in professional engineering can be registered without examination. After that date, however, an engineer can be registered and receive a certificate only after pasing an examination prepared by the Board.

The effect of this act will be to raise the standard of the engineering profession by safeguarding the public from the practiice of incompetent and untrustworthy engineers. It will undoubtedly raise the standard of municipal and county engineers, particularly in the smaller places, and its results will probably be similar to those of the act recently passed by the state o California regarding the competence of county engineers: it will limit the practice of the profession of engineering to men duly qualified by experience and training or both. More than 400 engineers have already applied for registration, so that it is anticipated that all who are able to qualify will have registered before January 1, 1920.

The Legality of Zoning Regulations

By Herbert S. Swan

Executive Secretary, Zoning Committee, New York, N. Y.

Court decisions hold that a city's expansion and growth are superior to the whims of a few capricious landowners.

Zoning is an exercise, not of the power of eminent domain, but of the police power. When property is taken under the power of eminent domain, compensation must be paid the owner if damage can be shown. No compensation is paid for property taken, or for limitations imposed upon the use of property, under the police power.

The two questions of fundamental interest to property owners in a municipality adopting a comprehensive plan controlling building development are:

1. Whether such regulations come within the purview of the police power; and
2. Whether the particular regulations adopted can be sustained as a competent exercise of that power.

Do Regulations Come Within the Police Power?

In answering the first question, it may be stated that it is no longer open to doubt that cities in this country can apply different building regulations to different districts. The decisions of various state courts as well as of the United States Supreme Court are conclusive upon this point. In Welch v. Swasey, 79 N. E. 145 (1907), for instance, the Supreme Judicial Court of Massachusetts sustained the validity of the act limiting the height of buildings differently in different districts in Boston. In Cochran v. Preston, 108 Md. 220 (1908), the Court of Appeals in Maryland sustained a somewhat similar act limiting the height of buildings in Baltimore. The decision of the Massachusetts Court was confirmed by the United States Supreme Court in Welch v. Swasey, 214 U. S. 91 (1908).

Zoning limitations on the use of buildings have also been sustained as being within the scope of the police power. Such regulations have been sustained by the courts in half a dozen states (Arkansas, California, Illinois, New York, Texas and Washington) as well as by the United States Supreme Court. Even retroactive regulations, which have weeded out undesirable business establishments from certain districts, have been approved by the highest courts in Arkansas and California, and on appeal, by the United States Supreme Court.

How broad a scope has the police power? The answer to this question is of the greatest interest to those who have the future planning of a city at heart, for city improvement depends so much upon what may or what may not be done under the police power.

The police power, of course, extends to the public health, morals and safety. But the power of the state by appropriate legislation to provide for the public convenience stands upon the same ground precisely as its power by appropriate legislation to protect public health, the public morals, or the public safety [Lake Shore and Michigan Southern Ry. Co. v. Ohio, 173 U. S. 285, (1899)]. In Bacon v. Walker, 204 U. S. 311 (1907) the United States Supreme Court held that the police power of a state embraces regulations designed to promote the public convenience or the general prosperity, as well as those to promote public health, morals or safety; it is not confined to the suppression of what is offensive, disorderly or unsanitary, but extends to what is for the greatest welfare of the state. The same view was expressed in Chicago, Burlington & Quincy Railway Co. v. Drainage Commissioners, 200 U. S. 561 (1906); and in Eubank v. Richmond, 33 Sup. Ct. 76 (1912). A still more extensive scope was given to the police power in Noble State Bank v. Haskell, 31 Sup. Ct. 186 (1911). In this case the Court stated:

> "It may be said in a general way that the police power extends to all the great public needs. It may be put forth in aid of what is sanctioned by usage, or held by the prevailing morality or strong and preponderant opinion to be greatly and immediately necessary to the public welfare."

The fourteenth amendment to the Constitution does not curtail the police power of the states when properly exercised. The United States Supreme Court stated in Barbier v. Connolly, 113 U. S. 27 (1885), that it was not designed to interfere with the police power of the state "to prescribe regulations, to promote the health, peace, morals, education and good order of the people, and to legislate so as to increase the industries of the state, develop its resources, and add to its wealth and prosperity."

Zoning is designed to promote not only the public health, morals and safety, but also the public convenience and general prosperity of the community. If the police powers extended only to the public health, morals and safety, it might be difficult in certain instances to show conclusively that every detail of a zoning scheme came within a competent exercise of the police power. But with the scope of the police power so extended as to include the promotion of the public comfort and convenience, the addition of wealth and prosperity to the state, the increase of its industry, and the development of its resources, it is hoped that even the minor features of it can be shown to be a legitimate exercise of the police power.

Altho the United States Supreme Court refrains from any attempt to define with exact precision the limits of the police power, its disposition is, nevertheless, to favor the validity of laws relating to matters completely within the territory of the state enacting them. It will interfere with local legislative authority, especially when its action is approved by the highest court of the state whose people are directly concerned, only when it is plain and palpable that it has no real or substantial relation to the public health, safety, morals or general welfare. Cusack vs. City of Chicago, 37 Sup. Ct. 192 (1917).

The Constitutionality of Zoning Regulations

The answer to the second question, it seems, will depend upon, first, whether the height, use and area classification can be shown to be reasonable; and, second, whether their application to specific districts can be shown to be reasonable. If the reasonableness of both the classification and the application of the several regulations can be demonstrated, then the victory will be complete. The attitude of the United States Supreme Court toward such regulations as have come before it furnishes strong ground for the hope that zoning will be upheld in full.

Zoning is not designed to operate oppressively upon any owner or upon any group of owners. Each scheme is framed with the greatest consideration for property rights commensurate with the public welfare. But despite this fact certain owners will no doubt feel themselves aggrieved. This, however, does not make the law any less valid so long as its provisions are not arbitrary. It is believed that the regulations adopted in any city may meet all the tests of constitutionality laid down by the United States Supreme Court. In Barbier v. Connolly, 113 U. S. 27 (1885), the Supreme Court discussed the question as follows:

> "Regulations for these purposes may press with more or less weight upon one than upon another, but they are designed, not to impose unequal or unnecessary restrictions upon any one, but to promote, with as little individual inconvenience as possible, the general good. Tho in many respects necessarily special in their character, they do not furnish just ground of complaint if they operate alike upon all persons and property under the same circumstances and conditions. Class legislation, discriminating against some and favoring others, is prohibited; but legislation which, in carrying out a public purpose, is limited in its application, if within the sphere of its operation it affects alike all persons similarly situated, is not within the [14th] amendment."

The attitude of the United States Supreme Court toward zoning was discussed in concise and clear ordinance in Little Rock, Ark., Reinman v. Little Rock, 35 Sup. Ct. 511 (1914). "So long as the regulation in question," said the Court, "is not shown to be clearly unreasonable and arbitrary, and operates uniformly upon all persons similarly situated in the particular district, the district itself not appearing to have been arbitrarily selected, it cannot be judicially declared that there is a deprivation of property without due process of law, or denial of the equal protection of the law, within the meaning of the 14th amendment."

In Hadacheck v. Sebastian, 36 Sup. Ct. 143 (1915), the United States Supreme Court gave frank expression to the view that a city's expansion and growth are superior to the whims of a few capricious landowners who might wish to thwart the greater welfare of the community:

"The police power of a state cannot be arbitrarily exercised. The principle is a familiar one, but in any given case it must plainly appear to apply. It is to be remembered that we are dealing with one of the most essential powers of government — one that is the least limitable. It may, indeed, seem harsh in its exercise — usually is on some individual — but the imperative necessity of its existence precludes any limitation upon it, when not exerted arbitrarily. A vested interest cannot be asserted against it because of conditions once obtaining. To so hold would preclude development and fix a city forever in its primitive conditions. There must be progress, and if in its march private interests are in the way, they must yield to the good of the community."

An examination of the decisions of the United States Supreme Court, and especially of the four great cases on zoning — Welch v. Swasey, Reinman v. Little Rock, Hadacheck v. Sebastian, and Cusack v. City of Chicago—offers every encouragement for the belief that zoning may be sustained by the highest court in the land. Care must, however, be exercised in drafting the regulations for each locality so that they fit local conditions, that they are not arbitrary or discriminatory, and that they do not fall within the ban of class legislation. Above all, reasonableness must be the test of both the classification and the districts established. Whether the legality of any particular zoning scheme will be sustained, seems to depend more upon the carefulness and fairness put into the preparation of the regulations than upon a lack in the forward-looking attitude of the court.

The Public Defender in Practice

By Nathaniel P. Willis

Public Defender, Columbus, Ohio

Much has been said and written about the public defender and the theory upon which the office is based. Comparatively little has been written about the office in actual practice.

In the criminal branch the work covers a broad field, for the reason that the poor who are charged with crime are not able to secure bondsmen and are therefore absolutely helpless behind prison walls. The work of the defender begins by interviewing the prisoners and ascertaining the facts of their cases and the charges placed against them. The cases of those who have a worthy defense are then prepared and tried in court. For those who are guilty but have no defense, the public defender attends to such matters as notifying friends or employers and to minor matters of the prisoners' personal business. Often prisoners who are able to employ counsel desire to have their friends notified in order that the latter may secure bonds or prepare their cases for them. This service the defender is always glad to perform in order to expedite their cases.

Cases where prisoners are held on investigation and their friends are not permitted to interview them before a charge is placed against them often work a hardship, and the defender in such cases often secures information for the prosecution so that a charge can be filed and the cases disposed of. After these cases are slated for trial the facts are again reviewed and the prisoners are informed how to plead and what action is deemed best in each special case. When persons come into court on small charges, the judge often finds it possible to release them on condition that they go to work, and in such cases, the defender aids in securing employment for them.

A close record is kept of the persons convicted. If the defender finds that a person serving sentence deserves a parole and has no friends to intercede in his behalf, the defender takes further steps to secure the release of the prisoner. When fines are imposed and the prisoner is without funds, it often happens that the defender can persuade a friend to pay the fine, and thus secure the money for the city. During the year 1918, the public defender's office in Columbus, Ohio, handled several hundred cases, and of the cases tried, 2 per cent were dismissed, 5 per cent were suspended, 6 per cent were continued generally, which amounts to much the same as dismissal, and 6 per cent were put on probation

The Work in the Civil Division

In the civil division the public defender is also able to do much good work, but in this branch careful scrutiny of the cases must be made, as persons who are able to employ counsel often attempt to impose upon the public defender. There is an infinite variety in the claims which are presented. Some necessitate going into court, but the majority are adjudged by getting in touch with the other person or persons concerned. When a complainant has a just cause and no settlement can be reached, a suit is filed. Again, when any person has been unjustly accused, a defense is filed and the case is tried in court.

During the year 1918 in Columbus, over 100 cases were tried in the civil division. Approximately 400 cases were adjudged outside of court, many of these by telephone, others by letter and consultation. The public defender in 1918 wrote over 300 letters in his work of bringing contending parties into the office to settle claims and disputes. Among the cases handled during the last year, there were many for dependents whose only source of support was in the naval or military service of the United States. The public defender's office rendered a great service to these dependents in such cases as forcible detention, attachment and replevin suits. In most of the cases tried or adjusted outside of court, the amounts involved were small, but of vital importance to the poor persons who could not afford to lose any wages due them or any belongings that they might have.

The public defender need not be extravagant in performing the duties of his office. Outside of the salary attached to the office, in 1918 the public defender in Columbus spent only $11.85. Such economy is possible only thru the hearty coöperation of the court and the police department, and the use of existing court facilities, such as telephones, office equipment, stationery, etc. Such economy would, of course, be impossible if the public defender were obliged to procure or furnish at the city's expense the equipment just mentioned. The work of the public defender is essentially the human side of the court work. His task is to humanize the law while at the same time expediting the operation of justice.

A Successful Public Market in a Small City

By William B. Hatch

Ypsilanti, Mich., is a college city of about 3,000 population. It is about thirty miles from Detroit and forty miles from Toledo, and is surrounded by a good agricultural section. Just a short time before the State and Federal Governments began to investigate the high cost of living, some citizens of Ypsilanti decided to try a practical experiment at home. There had been for some time criticism by the farmers who would naturally do their trading and marketing in Ypsilanti, that they did not find a satisfactory market here. They complained of the lack of any real competition and of any certain market for all they had to sell, and the consumers in the city complained that there was no opportunity for trading direct with the producers. On various occasions a public market had been suggested in the local press, but there seemed to be a more or less general impression that such a market could be made successful only in a larger city, so from year to year nothing was done about it.

Early this summer the Ypsilanti Federation of Women's Clubs decided to concentrate its activities on a public market. The committee from the club asked the Common Council for authority to hold such a market, but the Council did not seem to have any faith in the enterprise and did not lend much encouragement to it. The women, however, were persistent, and finally the Council granted authority to use a space one block long on one side of one of the main paved streets.

The committee at once set about an educational campaign among the women of the city and the producers around the city. One farmer who deals considerably with a good many other farmers in his part of the country became interested and offered to invite the farmers to come on the first market day, and he later consented to act as a market master. This has proved a wise choice, because as a farmer he fully appreciates how to deal with farmers and there has been a fine spirit of coöperation.

The committee also had a card like the following printed:

MARKET DATA.

Name. . . . .
Address. . . . . .Telephone. . . . .
Distance from Ypsilanti. . . . .
Direction. . . . .
What day or days in the week do you prefer?
. . . .
What hours?. . . . .
What kind of produce will you bring?. . . . .
. . . .
. . . .
. . . .
About when will it be ready to market?. . . . .
What is your preference for location of market—near center of business district, in an open space, or on a street?. . . . .
If latter, what street?. . . . .
Please suggest name and P. O. address and telephone number of anyone else interested in this market:. . . . .
. . . .
. . . .
. . . .
Hurry this data back with any further suggestions you have to offer to
. . . .
Market Committee, Ypsilanti Federation of Women's Clubs, Ypsilanti, Mich.

This was sent thru the mail and delivered in person to producers. They were to supply the data and return the card so that the committee might be able to keep producers and consumers in touch on short notice by telephone if necessary. The local press coöperated in giving publicity, and the committee bought some advertising space to further its educational work. It also visited the Grange and the Gleaner meetings and explained the project, which was cordially received and assured of hearty coöperation by the producers in these organizations.

The location chosen was good for a summer market. It was on the east side of a north-and-south street, and all but one of the brick buildings on that side were two stories high, so the farm products were exhibited in the shade, as will be seen by the accompanying photograph. The market hours were made from 8 to 10, in order to have the market snappy. Another happy circumstance is the location of the city rest room in the middle of the same block on the opposite side of the street. This rest room, in charge of a matron, contains a homelike front room, well furnished with easy chairs, tables, books, magazines and papers, writing desk and stationery. Another room is fitted up with a couch and facilities for caring for anyone temporarily ill. There is also a telephone and ample toilet facilities, as well as room and plenty of chairs for an ordinary-sized conference. On the second floor there is room for large committee meetings, so the building operates as a sort of clearing-house between producers and consumers, as well as a general social center for both urban and rural citizens, and the public market supplements this social intercourse in a most satisfactory way. It is resulting in the much more cordial coöperation of a much larger community.

Among the most commendable features of the public market are its simplicity and small cost. There is really no expense connected with it except what the producers pay — at present only 15 cents for the privilege of occupying a place with automobile or other conveyance. This fee is collected by the market master, He in turn makes a reasonable charge for his time. Any litter left when the market is over each day is cleaned up, and at the end of the season the balance of the receipts will be turned toward the support of the rest room.

The only source of opposition would naturally be the grocerymen, but practically none has developed. Most of the grocerymen have shown their good sense and good citizenship by saying: "We do not think it will really hurt us, because on the green goods which we buy from the producers we do not make profit and often such goods wilt and spoil on our hands before we can dispose of them. If the producers can sell direct to the consumers for cash, the producers will bring a considerable part of the cash to our grocery stores to buy what they need in the grocery line, and on the whole it will benefit us."

A MUCH APPRECIATED BUILDING CONTAINING REST ROOM, COMFORT STATION AND MEETING ROOMS
Opposite Curb Market, Ypsilanti, Mich.

This opinion seems to be gaining favor. Men in other lines of business see the advantage, as the market is bringing many new customers to the city with their produce, and the city stores will naturally get the bulk of the trade of the producers who come here. There are even some purchasers who drive here from a city more than twice as large as Ypsilanti where they have no public market. The market started, it should be said, at an opportune time, because the need is acute. But it started at a disadvantage in another respect, because the producers, not knowing that such a market would be started some time in the summer, had not planted in anticipation of it and therefore had only a limited supply of products for this first season.

There will undoubtedly be comprehensive plans made for next year. The market has already demonstrated its practicability in the food crisis. There is already discussion as to whether some central place ought to be provided for continuing this interchange between producers and consumers thru the winter, or whether, on account of not having planted for it, the producers may lack the products to make such a market a success thru the coming winter. There is talk also of organizing so as to promote the maximum production on the farms in this area, and of using the public market to encourage the maximum consumption here, and then broadening the organization so as to send the surplus on trucks to Detroit and Toledo. There are good roads from here to both of these big growing cities. Already the farmers at the county seat in a nearby county — apparently because the consumers of that city did not coöperate by supplying a public market — have organized a coöperative corporation called the Community Market and are sending their products thru this city to Detroit, a distance of nearly 70 miles. The Ypsilanti Federation of Women's Clubs is receiving inquiries from other sections, showing that there seems to have been a general belief that such interchange facilities between producer and consumer were not practical in anything but large cities. There is no reason why such a plan cannot be made to work in both larger and smaller places. If adequate facilities for interchange were supplied, it would seem that a considerable portion of the perishable food produced in a given community could be consumed there and a substantial business in food could be carried on there if the people wanted it enough to give the necessary coöperation and support.

This public market project in Ypsilanti has worked naturally and satisfactorily into our reconstruction program. Some of the children of the city were taught to have war gardens. The public market gives them a chance to increase that production, to sell their surplus and to learn wholesome habits of thrift. This applies even more to the boys and girls in the countryside. Labor is scarce in the country as well as elsewhere, but these boys and girls can bring into town a small load of products in an automobile or a light wagon and sell it for cash. This will teach the younger citizens the ways of business, teach them to meet their fellow citizens from the country and from the city and to do business with them. It will economize time and energy because the boys and girls from the country can thus bring in the products from the farm to the established market, do the trading for the family and take back the necessary supplies. With an assured market, they will from year to year plan for it and thus increase the food supply of the community and the nation. It is of more than passing importance that each community develop the facilities for consuming as great a volume of fresh, wholesome, home-grown food as possible.

PART OF YPSILANTI'S CURB MARKET ON A BUSY DAY

An analysis of the situation shows that not to exceed 5 per cent of the population is interested in the distribution of food. The question of a public market resolves itself into this: Should any municipality be administered for the 95 per cent or the 5 per cent against the 95 per cent of consumers and the 100 per cent of producers? The interests of the 95 per cent and their future strength are not likely to leave any doubt in the mind of

A SUCCESSFUL PUBLIC MARKET ORGANIZED BY THE NEW YORK STATE FOOD SUPPLY COMMISSION IN AGRICULTURAL HALL, ALBANY, N. Y.

public officials as to whether they should encourage the interchange between producers and consumers.

So popular has the Ypsilanti market place become that both men and women are saying, "I would go to the market for the social side if for nothing else. I see there everybody I ever knew, and would seldom see them in any other way." But the big result is that thirty or more loads of wholesome food are exchanged at fair prices while the social hour is enjoyed. The aggregate of sales from July 29 to November 1, was $17,000.

Unearned Increment in a New Form

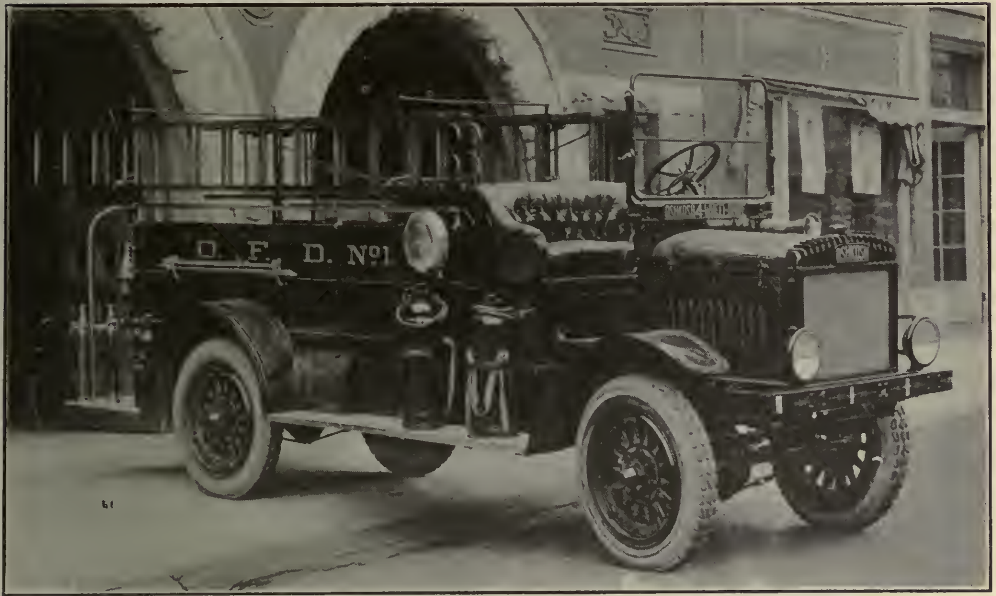
Clean-up campaigns and particularly block competitions have become popular as a means of teaching the value of order and cleanliness in the appearence of homes and front yards. Recently in New York City a group of irate tenants appeared before the Mayor's Committee on Rent Profiteering with this tale of woe: Their block had won first honors in a "Keep Your House Clean" competition, and a silk flag proudly proclaimed the prize house. The next month they found their rent raised $2 to $3.50. The agent of the landlord, who had done nothing whatever to contribute towards the new cleanliness, when pressed for a reason said, "I suppose the owner saw the flag."

New York City's subway cost something less than $50,000,000, but the increase in land values along the lines of the new subway amounted to approximately $80,000,000. When are we going to cease presenting to the owners of the land the increase in value brought about by social or community action?

Broken Glass Dangerous

Many people who live in cities and towns evince about the minimum consideration for other members of the community. They are quite oblivious of community rights unless, at the same time, their own personal comfort or convenience is endangered. A simple concrete illustration of this is the careless manner in which broken glassware is left in city streets. During the winter, many bottles and jars are broken by delivery men. The broken parts are left where they fall, and with the disappearance of the snow in the spring, patches of broken glass are left in the winter's accumulation of rubbish and filth, a constant menace to all rubber-tired vehicles. Often, too, such bottles are broken near the entrances of homes, and, instead of being gathered up and removed, are left as they fell. Painful and more or less serious accidents have occurred to many children who have stepped or fallen on broken milk bottles. Civic authorities might well consider the advisability of making such forms of carelessness punishable offences. By making examples of a few, this class of offenders might be made to realize that sooner or later inconsiderateness of others acts as a boomerang.

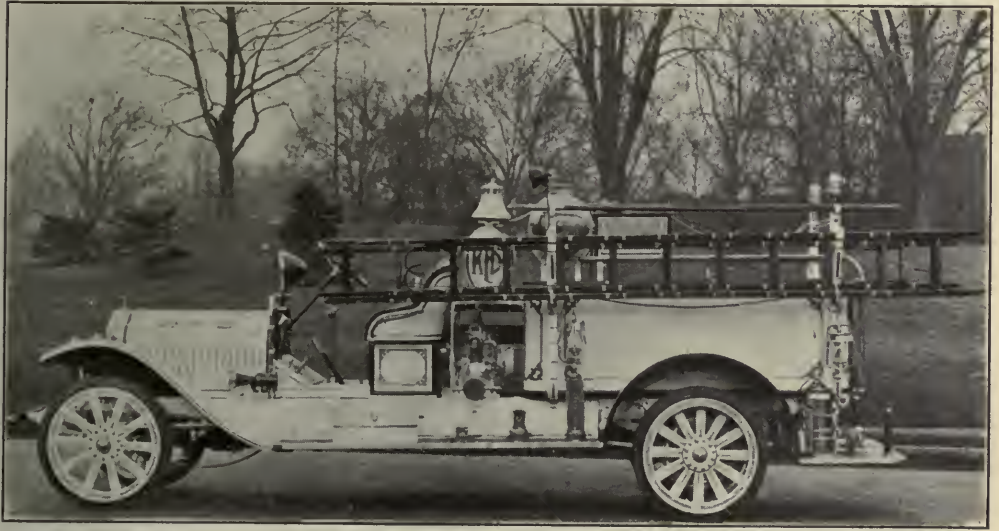
Municipalities and Counties Appreciate the Importance of Motorizing



Courtesy Oshkosh Four Wheel Drive

TRUCK IN SERVICE AT CENTRAL STATION OF THE OSHKOSH, WIS., FIRE DEPARTMENT

This truck weighs 9,400 pounds complete, and carries 1,500 feet of hose, a 40-gallon chemical tank and seven men. It is provided with U. S. tires and has been driven better than 45 miles when necessary. Fire Chief R. A. Brauer says that since the truck was put in service they have had a great many calls and in each they have been able to reach their destination in a much shorter time than was possible with the truck formerly in service

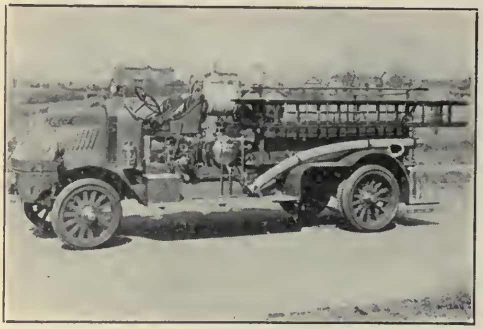


A WHITE PUMPER USED BY THE CITY OF KALAMAZOO, MICH.

The city has an arrangement with a local garage for inspection service at a nominal fee. This has meant that considerable money has been saved by having small defects looked after and corrected before they grow to big items of expense. Aside from the financial consideration, it is of utmost importance to have fire apparatus in perfect working condition at all times, and the inspection service guarantees that this will be so

MACK EQUIPMENT in your BUDGET

Have you included any in next years Budget?



FIRE APPARATUS

A Complete Line in
Light and Heavy Models

ROAD BUILDING EQUIPMENT

Hot or Cold Bituminous
Material Distributors

Cover 16 to 24 feet per trip

STREET CLEANING APPARATUS

Sprinklers, Flushers
and
Catch Basin Ceaners

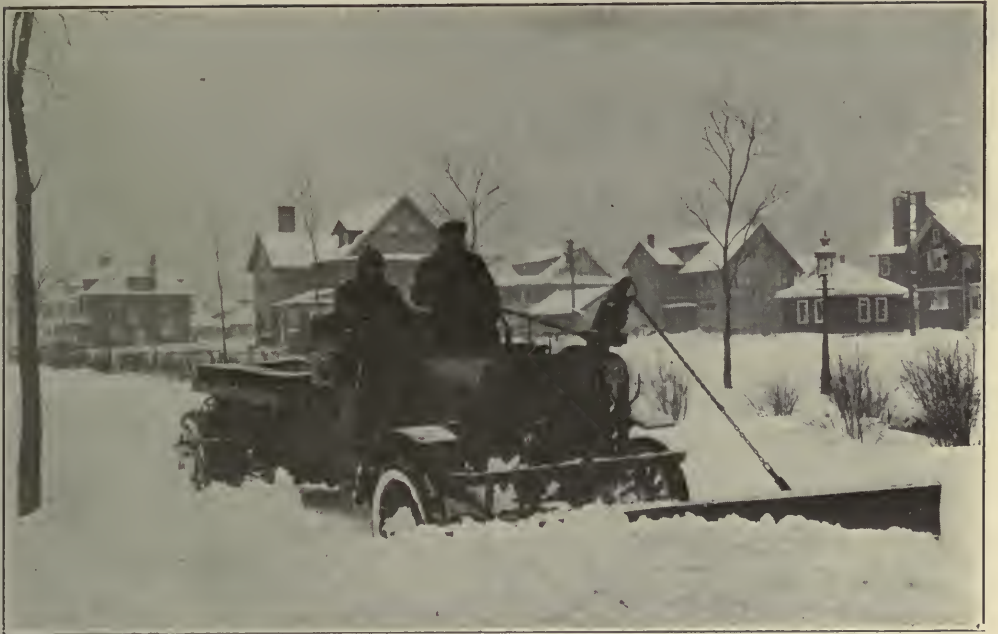
REFUSE COLLECTION EQUIPMENT

Dump Trucks, Garbage Trucks,
Tractors and Trailers

Ask For Prices Now

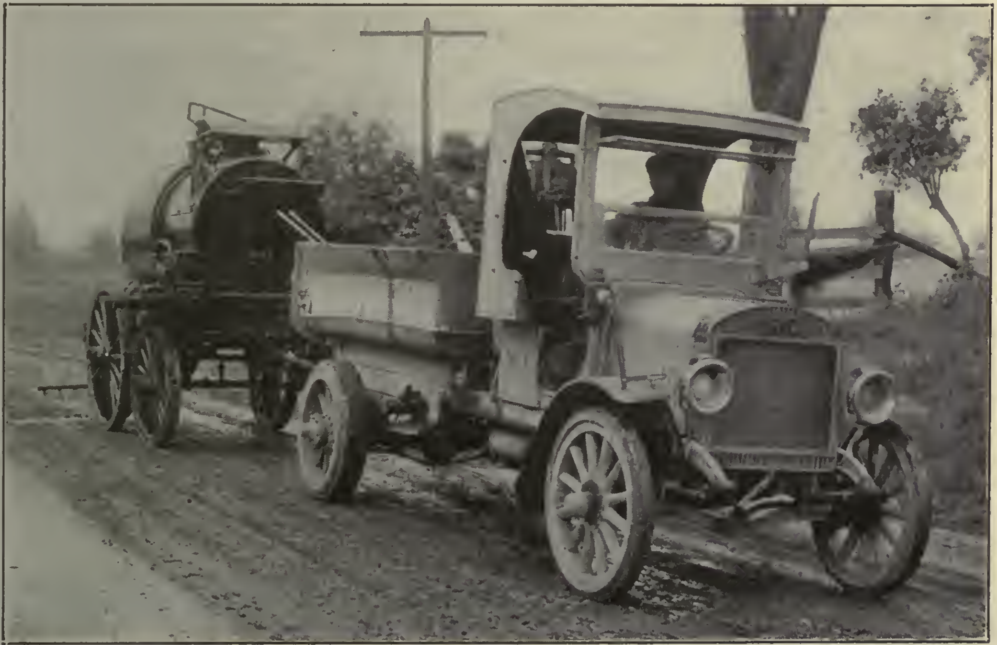
International Motor Company

West 64th Street, New York City



A PIERCE-ARROW TRUCK WITH CHAMPION SNOW PLOW CLEARING A STREET IN BUFFALO, N. Y.

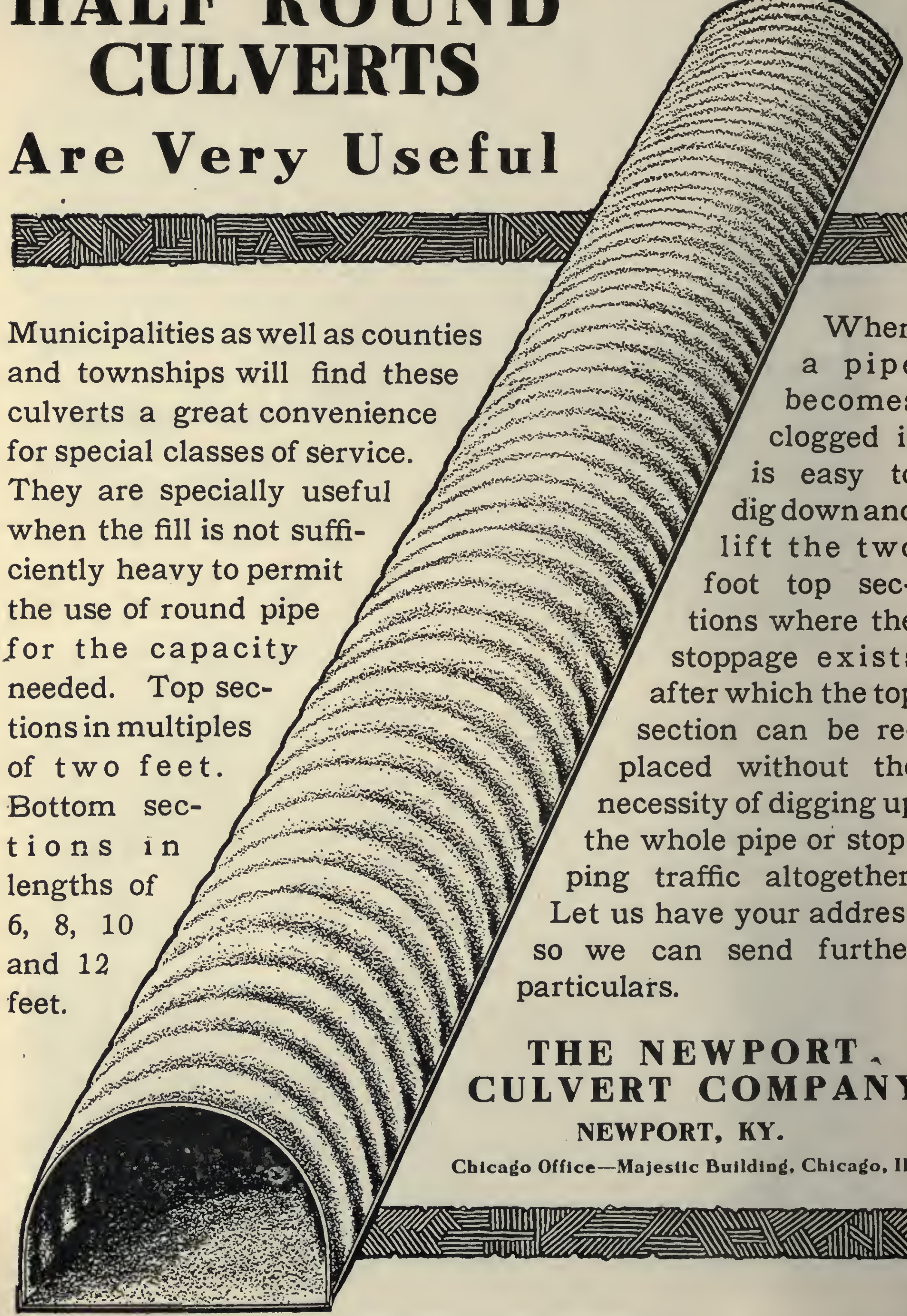
If you are interested in obtaining reliable figures on the cost of operation of your motor trucks, write to Engineering Editor, THE AMERICAN CITY, Tribune Building, New York City, and ask for a free book on the National Standard Truck Cost System. As soon as you get it, put it into operation and know the return on your trucks.



A G-M-C TRUCK USED FOR GENERAL ROAD WORK IN OAKLAND COUNTY, MICH. PHOTOGRAPH SHOWS IT HAULING A ROAD OILER

HALF ROUND CULVERTS

Are Very Useful



Municipalities as well as counties and townships will find these culverts a great convenience for special classes of service. They are specially useful when the fill is not sufficiently heavy to permit the use of round pipe for the capacity needed. Top sections in multiples of two feet. Bottom sections in lengths of 6, 8, 10 and 12 feet.

When a pipe becomes clogged it is easy to dig down and lift the two foot top sections where the stoppage exists after which the top section can be replaced without the necessity of digging up the whole pipe or stopping traffic altogether. Let us have your address so we can send further particulars.

THE NEWPORT CULVERT COMPANY

NEWPORT, KY.

Chicago Office—Majestic Building, Chicago, Ill.

The City's Legal Rights and Duties

A Monthly Department of Information for City Attorneys and Other Municipal Officers, Summarizing Important Court Decisions and Legislation

Conducted by A. L. H. Street, Attorney at Law

Restoring Street Surface

Where a sewer construction contract requires the contractor to replace pavement he is bound to put it in good condition, altho it may have been in disrepair when he commenced work on the sewer. Under a section of the New York Railroad Law, a surface street railroad company is bound to replace pavement of a street lying within its rails and two feet outside where the pavement has been removed in constructing a sewer improvement. (New York Supreme Court, Appellate Division; John J. Creem Co. vs. City of New York; 177 New York Supplement, 229.)

Street Railway Rates

The Nebraska Supreme Court lately reversed an order of the State Railway Commission which denied an application made by the Omaha & Council Bluffs Street Railway Company to increase its fares from 5 to 7 cents. (173 Northwestern Reporter, 690.) The decree of the Supreme Court directs the Commission to establish a temporary rate (intimating that a rate of 6 cents for a single ticket and ten tickets for 55 cents would be proper) pending a determination of what will be a fair permanent rate.

The opinion of the Court, aside from repeating the well-settled rule that a street railway company, or other public service corporation, is entitled to rates which will yield a reasonable average return on a fair value of its property, holds that an unexpected rise in prices and wages, such as has spread over the country, raises a presumption that old rates are insufficient to yield a fair average return, warranting a temporary increase in rates, pending an investigation of an application for a permanent increase. It is suggested that if the temporary rate should prove to be too high, the condition may be rectified under the final order.

Incidentally, it is decided that the Commission has jurisdiction to establish street railway rates in Omaha to the exclusion of the City Council.

Control Over Street Railway Fares

A decision of the Tennessee Supreme Court upholds the validity of an act passed at the recent session of the State Legislature giving the State Railroad Commission control over street railway fares, to the exclusion of municipalities. (City of Memphis vs. Enloe, 214 Southwestern Reporter, 71.)

Street Paving Estimates

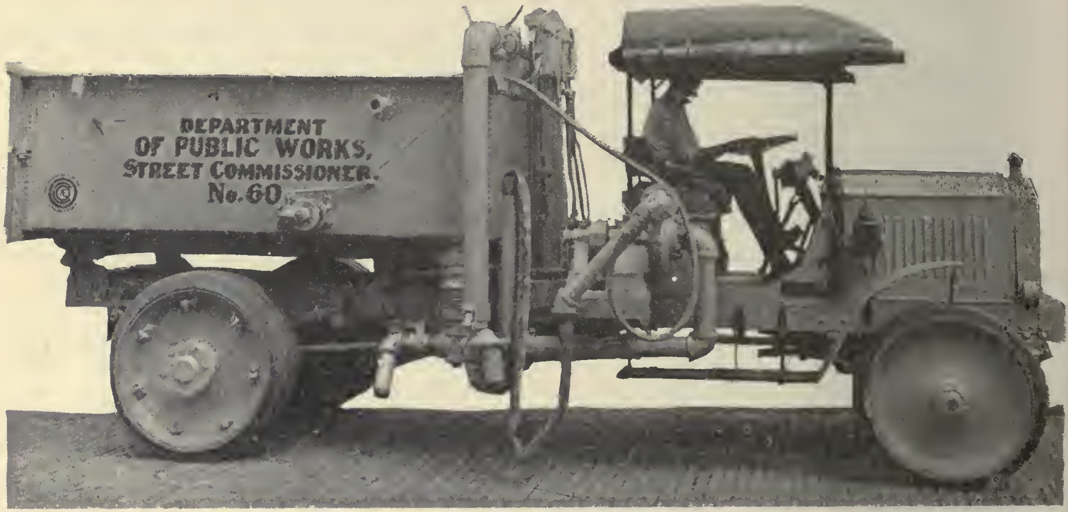
Street paving assessments will not be declared to be void because the preliminary estimate was not made by the city engineer, as required by statute, but by expert engineers employed by the council for the purpose, where it appears that the city engineer was not qualified to make estimates on work of the extensive character undertaken and no objection was made to the employment of other engineers until after the work was done. (Nebraska Supreme Court, Diederich vs. City of Red Cloud, 173 Northwestern Reporter, 698.)

Control Over Lighting Utilities

A clause in a charter, empowering a city "to provide for the lighting of streets and public grounds, the laying down of gas pipes, and erecting of lamp posts for conveying electric lights, * * * and to regulate the distribution, sale and use of gas and other illuminative fluids," authorizes grant of a franchise to an electric light company. Provision in such a franchise for maximum charges for service authorizes increase in rates established by the company below the maximum without consent of the city council, so long as the new rates do not exceed the maximum. Unrequired submission by the company to the city council of a proposed schedule of rates is not binding in the sense that future schedules must be so submitted. A franchise fixing public service rates is a contract the obligation of which cannot be impaired without the service corporation's consent by the city de-

Otterson Auto-Eductor Cleans Catch Basins

Saves Time - Money - Labor



The Otterson Auto-Eductor is saving thousands of dollars yearly to every city using them. Efficient, economical, and sanitary in operation. Cleans catch basins in from four to twenty minutes.

The following cities are now using the Otterson Auto-Eductors:—

Seattle, Wash.
San Francisco, Cal.
Brooklyn, N. Y.
Milwaukee, Wis.
Providence, R. I.
Richmond, Va.
Akron, Ohio.
Halifax, N. S.

U. S. Army Camps.

Camp Meade, Md.
Camp Lee, Va.
Camp Gordon, Ga.
Honolulu, H. I.
Portland, Oregon.
Louisville, Ky.
Chicago, Ill.
Indianapolis, Ind.
New Bedford, Mass.
Albany, N. Y.
Bridgeport, Conn.

Equipment mounted on any 5-TON Chassis of suitable standard make.

THE OTTERSON AUTO-EDUCTOR CO.

817 FAIRBANKS BLDG. SPRINGFIELD, OHIO.

nying the right to charge those rates. (South Dakota, City of Watertown vs. Watertown Light & Power Co., 173 Northwestern Reporter, 739.)

Birmingham Fire Escape Ordinance

Upholding the validity of a fire escape ordinance in force in the city of Birmingham, as against a claim that it gave the municipal fire board arbitrary discretion in requiring fire escapes, the Alabama Supreme Court recently said in the case of Birmingham Railway, Light & Power Co. vs. Kyser (82 Southern Reporter, 151):

> "Upon a reconstruction of the ordinance, the Court concludes that it does not give the fire board an arbitrary discretion in requiring or exempting buildings from fire escapes. The ordinance provides for certain kinds of fire escapes on all buildings over two stories high, except fire-proof buildings or those which at the time had adequate escapes in case of fire. In other words, it deals with three classes—buildings over two stories high which have no adequate fire escapes, fire-proof buildings, and buildings which already have adequate fire escapes, the last two being dealt with as exceptions from the ordinance; and the status upon which they are to be excepted is fixed by the ordinance itself, and the fire board is simply authorized to ascertain the status so fixed and to enforce the said ordinance. The board has no authority to exempt or discriminate in favor of or against buildings of general class dealt with in the ordinance; that is, all buildings over two stories high not being fire-proof or then having fire escapes. It is simply the duty of the board to ascertain fire-proof buildings and to also determine whether or not others already have adequate fire escapes, and to so certify, and to compel fire escapes upon all buildings over two stories high that are not exempt by the terms of the ordinance; that is, which are not fire-proof and which do not already have adequate fire escapes. An arbitrary discretion is one which discriminates between those of the same class or similarly situated, and the ordinance in question does not authorize the fire board to discriminate between buildings of the same class, but merely requires it to ascertain and determine which ones belong to the respective classes as fixed and defined by the ordinance. We, therefore, hold that the ordinance in question is not void, but should be upheld."

Abutters' Rights in Streets

The owner of the fee of land used by a city for street purposes has the right to use the subsurface in front of his property, so long as he does not interfere with the rights of the municipality below the surface for sewers, and pipes for water, gas, or other proper purposes. Subject to reasonable municipal regulations, he is entitled to make openings in the sidewalk to give access to the area beneath. But he is bound to so construct and cover the opening that it shall at all times be as safe for the use of the public as if it did not exist, and public travel over the same be not unreasonably interfered with. The city is empowered to require the abutting owner to procure a permit before making an opening in the sidewalk, and to see that proper safeguards are thrown about the work, and that in its progress the right of the public to use the sidewalk is not unreasonably interfered with. The city also has a right to regulate how excavations in the subsurface of a street shall be made by the abutter, and how trap-doors or other appliances shall be constructed. But it may not arbitrarily refuse to grant a permit, nor, under the guise of regulation, place an additional burden upon him, or make regulations that would in effect deprive him of his rights in the subsurface. (Florida Supreme Court, S. H. Kress & Co. vs. City of Miami, 82 Southern Reporter, 775.)

An Invalid Health Ordinance

An ordinance of the city of Pensacola reading as follows has been declared by the Florida Supreme Court to be invalid as being unreasonable and arbitrary in its terms:

> "That every house and building located within the limits of the city of Pensacola in which people live, or where they congregate or assemble, or any kind of business is carried on, shall be provided with a sanitary privy that shall be connected with a sewer as provided by existing ordinances," etc.

The main ground of the Court's objection is that "common experience teaches that there are buildings in cities where people congregate or assemble or transact business in which privies are not appropriate, or perhaps not permissible, in the interest of the public health and general welfare. This ordinance makes no exceptions, but is absolute and comprehensive in its provisions. Even if it is competent for the city to require the construction and maintenance of privies in all houses in which people live, and in other houses in which people assemble or conduct business where the public health and welfare will be thereby conserved, it is manifestly not within the power of the city to require a privy to be constructed and maintained in all the classes of houses named in the ordinance, except where such a utility is appropriate or permissible to serve the public health and general welfare." (Cary vs. Ellis, 82 Southern Reporter, 781.)

"There's a fire at Mary's School!"

No use to 'phone! Try to keep calm until we can find out whether Mary has escaped.

This is happening in some city, on an average, each day or two during the school year. Read about the cause and the remedy below.

Suppose it was your girl?

NOT long ago there was a fire in a business college in the heart of the business district of a Pennsylvania city. Five hundred girls escaped; but—

Three were injured—

Seven were overcome by smoke—

Five hundred mothers are now afraid to trust their daughters in such a building.

Are you allowing that sweet young daughter of yours, or the son who will soon be able to help Dad in his business, to spend their long school hours in a building that looks all right, but is no more than a deadly fire trap?

All over the country, in large cities and little villages, thousands upon thousands of boys and girls go to school in just such dangerous buildings.

Now, since children are compelled by law to go to school, common humanity demands that their lives be safeguarded against fire.

Fire drills?—Yes. Fire escapes? Of course! *But* if the flames spread so quickly as to cut off windows and stairways, all the fire drills and fire escapes in the world will not bring back one of the pitiful little victims of official negligence. Fire never does the expected thing. The only thing to do is to stop the first tiny flicker of flame.

With Grinnell Automatic Sprinklers if a fire starts in a basement, or anywhere else, it will be kept right where it starts and be extinguished quickly. *When the fire starts the water starts.*

Men have protected some five billion dollars of their business property from fire by the use of automatic sprinklers.

Meanwhile our wonderful humanitarian institutions and our fine schools continue to burn, criminally jeopardizing thousands of lives.

With a one cent post card you might save lives. Who knows? Should you hesitate to send for a free booklet that tells just what to do?

Read *"Fire Tragedies and Their Remedy"*

If you feel too indifferent to send for a free booklet telling what to do, what right have you to blame others when a horrible calamity occurs in your town? Think of your schools and write today, now, for this intensely interesting booklet. Address General Fire Extinguisher Company, 283 West Exchange Street, Providence, R. I.

GRINNELL
AUTOMATIC SPRINKLER SYSTEM

When the fire starts the water starts

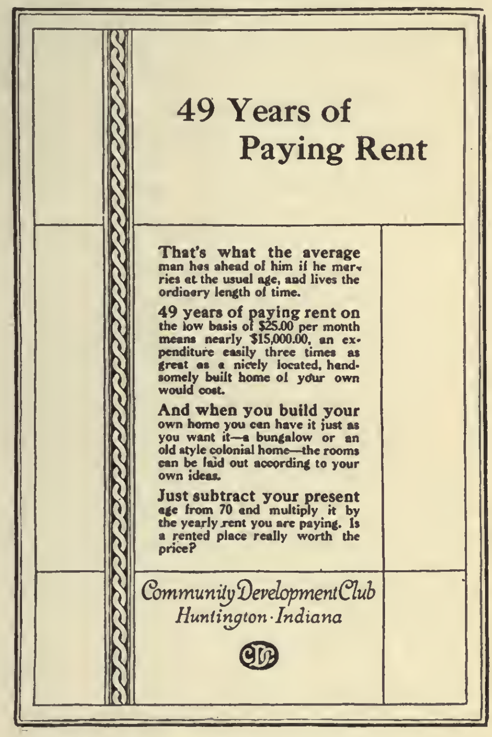
News and Ideas for Commercial and Civic Organizations

Advertising-Educational Campaign Produces Houses in Huntington

Huntington, Ind.— Home-building in Huntington has been stirred into activity during the last two years solely by means of a well-planned advertising campaign. The statistics show that more new houses were built in Huntington during 1918, in proportion to the population, than in any other city in Indiana, which is a strong testimonial to the effectiveness of the advertising.

The campaign was managed by the Huntington Community Development Club, which was formed last year by the progressive builders, supply dealers and lumbermen of the city. It also included in its membership hardware merchants, plumbers, electrical contractors, sheet-metal contractors, furnace dealers, furniture dealers, in fact, representatives from practically every branch of the home-building industry. The Club was regularly organized with a president, a secretary and a treasurer, and an advertising committee. The members were asked to subscribe small amounts, not more than $25 nor less than $10, toward a fund to be used in educating the people to the necessity for building homes at once in order to relieve the appalling shortage. Full-page ads were run in the two daily papers for several weeks. The advertisements referred simply to general building conditions and did not advertise any particular commodity.

This year the Club was reorganized and the same methods were employed. A number of other firms and individuals were added to the membership list, such as real estate dealers, building contractors, cement contractors, carpenters and masons. This time the services of an advertising expert were employed, and he got up a set of sixteen attractive advertisements, the majority of them in story form, which were used one at a time as the most prominent feature of one page of the daily paper. Number two of the series is reproduced herewith.



49 Years of
Paying Rent

That's what the average man has ahead of him if he marries at the usual age, and lives the ordinary length of time.

49 years of paying rent on the low basis of $25.00 per month means nearly $15,000.00, an expenditure easily three times as great as a nicely located, handsomely built home of your own would cost.

And when you build your own home you can have it just as you want it—a bungalow or an old style colonial home—the rooms can be laid out according to your own ideas.

Just subtract your present age from 70 and multiply it by the yearly rent you are paying. Is a rented place really worth the price?

Community Development Club
Huntington · Indiana

ONE OF THE ADVERTISEMENTS USED IN THE HUNTINGTON HOME-BUILDING CAMPAIGN

In addition to the greatly increased activity in the building of homes, the city is to have a modern $250,000 hotel. The story of how the hotel was acquired and how its construction will result in the erection of one hundred houses in addition to those already planned, is interesting. One of the well-to-do citizens owned one hundred vacant city lots. The Commercial Association, which is a live organization, proposed to him that if he would finance the building of a $250,000 hotel, the Commercial Association would sell the city lots and secure pledges from

How Are *Other* Chambers of Commerce

SOLVING THE HOUSING PROBLEM?

For the purpose of creating added interest and confidence in the financing of projects tending to alleviate the pressing need for added housing facilities in industrial communities of America, there is being prepared an analytical report of the activities in this connection of Chambers of Commerce throughout the country.

The Secretaries of Chambers of Commerce and Boards of Trade are asked to co-operate in this survey by answering the following questionnaire. To those who indicate their interest by sending in such replies a copy of the complete report will be forwarded.

1. Is there a housing shortage in your community?
   (a) Is it a shortage of industrial housing caused by increase of industrial activities; or a general shortage including houses and apartments of higher rental value?
2. Has the Chamber of Commerce (or Board of Trade) a Housing Committee?
3. Has a local Housing Corporation been formed?
4. Is the Chamber of Commerce active toward the production of houses and have industrial housing operations been carried out through its activity?
5. How is your Chamber of Commerce raising money for the provision of additional housing?
   (a) By popular subscription?
   (b) By subscriptions from influential citizens?
   (c) By subscriptions from industries?
6. Are first mortgage loans being obtained locally?
   (a) From banks, building loan associations, industries or individuals?
7. If you are building or have built houses
   (a) Are you sellng or renting them?
   (b) Are houses scattered or in concentrated developments?
8. Are local industries actively co-operating in solving your housing problem?
9. Are you interested in outside financial assistance?

WE are very much interested to know what success your Chamber of Commerce Committee, local Housing Corporation or other housing activity has had in the design, building and disposing of houses for workmen. Have the houses met with favor on the part of the public?

IN many localities we find that the high cost of construction is holding back housing activities and in others that the houses which have been designed did not meet the definite needs of the community.

MANIFESTLY some means of overcoming these difficulties must be found and to do so individual experience must be correlated with recent advance in the science of industrial housing and finance.

HORACE B. MANN
Architect
PERRY R. MAC NEILLE
Engineer
Town Planner

C. STANLEY TAYLOR
Project Engineer
RICHARD A. WALKER
Designer
GEORGE L. ROBINSON
Sanitation Engineer
CHAS. W. STANIFORD
Harbor Engineer
WILLARD W. GAY
Landscape Architect
HENRI C. HEPS
General Manager

In Replying please address
Financial Department

MANN AND MACNEILLE

NEW YORK — DETROIT

GRAND CENTRAL TERMINAL BUILDING
70 EAST 45TH STREET, NEW YORK

FINANCING
ARCHITECTURE
CONSTRUCTION
ENGINEERING
TOWN PLANNING
INDUSTRIAL HOUSING
MUNICIPAL EXPANSION

business men to build a home on each lot, to be either sold or rented to workmen or citizens desiring moderate-priced homes. He accepted the proposition. The business men were called together, and in fifty-five minutes pledges for the purchase of the one hundred vacant lots at prices ranging from $400 to $1,000 had been secured, the lots to be selected by drawing numbers. Agreements were secured from other individuals and business concerns to build houses on the lots. The builders are living up to their agreements, and it is expected that by the time the hotel is under construction, the houses will all be completed. The hotel, when finished, will be one of the finest in the Middle West.

The Community Development Club is naturally proud of the results of its efforts. It will be glad to supply to any one desiring them copies of the sixteen advertisements referred to free of charge, and matrices at fifty cents each.

J. M. MORRISON,
Secretary, Huntington Community Development Club.

The Plan for Financing House Building Developed in New Castle

New Castle, Pa.— The shortage of houses in New Castle necessitated the organization of a movement to provide relief. A plan has been worked out in this city on a substantial basis, which may be of interest to other communities in which the house building facilities are inadequate.

A committee, with E. W. Beadel as chairman, was appointed by the Board of Trade last year to investigate the housing conditions and to submit recommendations for relieving the acute shortage that existed. This committee arranged for a conference with representative real estate dealers, contractors and material men who were familiar with the situation. The committee made a general survey, which demonstrated the need of approximately 300 houses.

It developed that three lumber companies in the city were contemplating a merger, with a capital of $150,000. Each of these companies had confined its operations to the sale of materials. Our committee prevailed upon the management to add a house financing department and to increase the operating capital to $200,000, using $50,000 as a rotating fund to finance building operations for men of small means who would require extensions of credit that could not be provided by any other local agency. This proposal was accepted, and the members of the Housing Committee of the Board of Trade placed $50,000 worth of stock among local citizens, to be used as a rotating fund and kept separate from the other assets of the new corporation.

If a man having $500 wishes to build a house costing $4,000, the limit of his credit thru a trust company or money-lending agency would be $2,500, leaving a deficiency of $1,000. No machinery was provided to advance this amount upon second-mortgage security. The rotating fund referred to will carry paper of this character, and the new corporation will have the benefit of the sale of all materials used in the construction.

No advantage will be taken in the price, and the purchaser will pay one per cent per month on the purchase price of the property. This will provide for an initial program of fifty to seventy-five houses under a plan of monthly payments, and as the fund accumulates from the installments additional houses will be built. Any contractor in the city who will purchase his materials from the company can have the benefit of accommodations thru the rotating fund. He may bring to the company's office a second mortgage, negotiated upon the plan stipulated, and receive cash. The experience of local builders who have taken second-mortgage security to encourage the building of homes upon this plan shows a clean slate against loss during the last four or five years.

Two other local building companies, coöperating with the committee, drew up plans for the construction of one hundred houses of a substantial character, to be built upon a uniform specification by crews doing specified portions of the construction work on each building. For example, one crew will do all the foundation work, another will follow with the superstructure, a third with the roofing, a fourth with the flooring, a fifth with the interior finishing, and a sixth with the plastering, etc. Plans of a similar character will be made next year and the year following to provide additional housing facilities. This system has produced a very high efficiency and a correspondingly low construction cost on each structure.

A Dollar a Day VS Fire Losses Burglaries Hold-Ups Murders

More Protection
Not more policemen

Here are the facts for city officials, police commissioners and chiefs.

Nine out of ten towns and cities want and need better police protection.

This means more policemen or greater efficiency from the present force.

The efficiency of the police force largely depends upon each man's individual sense of responsibility.

Raising the responsibility limit mechanically

There's a different limit to it in every case UNLESS you can mechanically and unbeatably raise and standardize this limit.

That is exactly what the Hardinge Police Register does —

Takes any policeman capable of giving conscientious, vigilant service and by a mechanical, unbeatable check on his work, guarantees that he gives this service under any and all conditions.

Costs very little
Can't be made to lie

The Hardinge System to check the movements of all your men costs less than the salary of a roundsman for three months.

You ought to know all about the Hardinge

Many live cities are using it to beat the present high costs of added protection.

If you are a City Official write for our book "The Key to Vigilance.

HARDINGE BROS., Inc.

4151 E. Ravenswood Ave. Chicago, U. S. A.

There will, of course, be a great number of houses built by those who have sufficient means to build them without asking for this special accommodation. Considerable relief against the shortage of houses will be afforded during the ensuing year thru the agencies described, and we anticipate that within two years the housing situation will be fairly well adjusted.

JOSEPH W. KENNY,
Commissioner, New Castle Board of Trade.

Dallas Overcomes Industrial Housing Difficulties

DALLAS, TEX.— It recently became apparent to the progressive citizens of Dallas that certain oil fields in West Texas were of a magnitude to justify attention. The Dallas Chamber of Commerce therefore appointed an energetic committee to attempt to locate in Dallas the offices not only of the old and larger oil companies which always invade new oil fields, but also of the new oil companies, so that Dallas might acquire the reputation of being the headquarters of the most wonderful oil fields developed in this country. The Oil Development Committee succeeded in locating the general offices of so many oil and kindred industries in Dallas that the employes of these new concerns had difficulty in finding homes, as there had been practically no building in the city since the beginning of the war.

Once more the Chamber of Commerce came to the rescue. The President called a meeting of the members and, after laying the situation before them, asked subscriptions to stock of a housing company to build the homes so badly needed by the newcomers. At this meeting, at which the Dallas Housing Company was formed, $40,000 or $50,000 was subscribed, and subscriptions poured in afterwards until the fund reached $150,000. In the meantime, the Chamber of Commerce began to look about for a man who had had practical experience not only in home building, but also in handling first and second liens or mortgages which must necessarily be taken back against property sold to the average wage-earner, who usually begins the purchase of a home with a small cash payment and pays the balance monthly. Charles A. Myers, who had lived in New York for two years, but who for fifteen years prior to that time had lived in Dallas and had built and financed several hundred houses for himself, was the man finally chosen to be president of the Housing Company.

After the election of officers, the company opened offices in the Southland Life Building, and thru the press invited applications for homes. After the first three or four hundred applications had been received, the Housing Company was able to determine in which parts of the city homes were in the greatest demand, and the lots were purchased and the houses built accordingly.

The Housing Company found that by buying lots in multiples of five and ten, they could be purchased to better advantage, and that by erecting houses in groups of five and ten, better figures could be secured for material and from the sub-bidder. Anticipating a continued rise in the price of building materials, the Housing Company placed an order early in June for lumber for one hundred houses besides those it had under construction or contract.

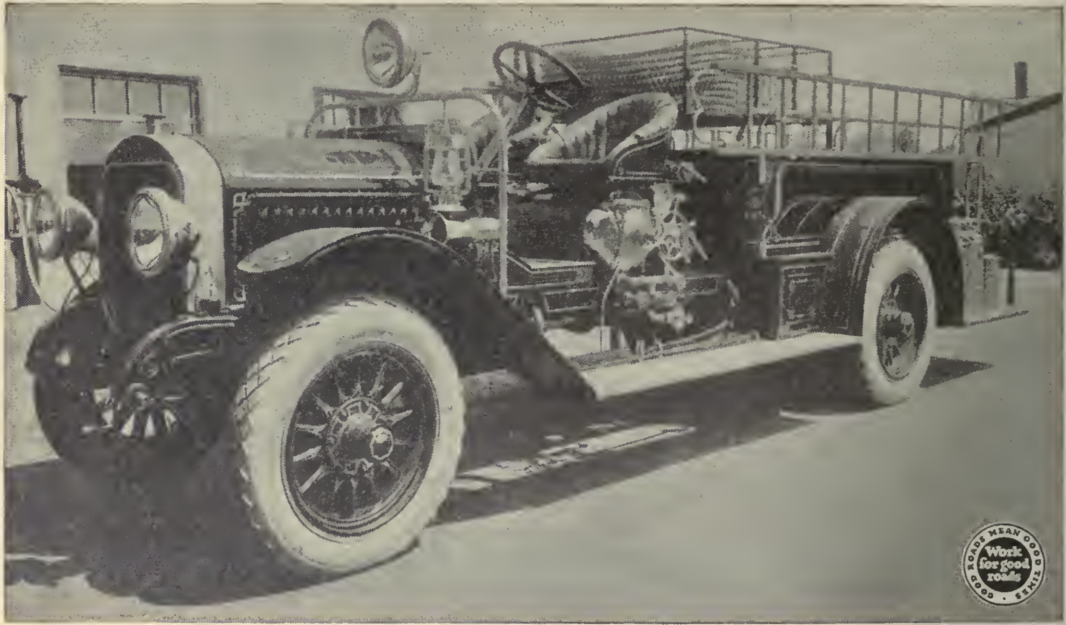
The company has no fixed terms for the purchase of a home. It endeavors to secure from the buyer some cash payment, and as much monthly as possible without overloading the buyer, yet an amount consistent with good financing. The demand for the houses has kept ahead of the supply. The company has seen every house sold before it was finished.

CHARLES SAVILLE,
Director of Industrial Development, Dallas Chamber of Commerce.

Grand Rapids Seeks Solution of Local Industrial Problems

GRAND RAPIDS, MICH.—A recent activity of the Grand Rapids Association of Commerce was the organization of a Committee on Industrial Relations, which will operate to prevent differences arising between the employers of labor and their employes in the Grand Rapids district from becoming serious. The object of the committee, as stated in its announcement, is as follows:

> "Realizing that one of the greatest problems confronting the people of every industrial center in this country during the next few years would be the relations between employers and employes, the Board of Directors of the Grand Rapids Association of Commerce authorized the appointment of a standing committee on Industrial Relations, the chairman to be a member of the Board of Directors. In appointing the committee, the president aimed to be absolutely fair to all parties concerned, so there were chosen as members four employers of labor, four employes (three representing organized labor and one unorganized), and the public at large is represented by three non-employers of labor, thus creating a committee in absolute balance. In order that labor



They Pull Through Snow Easily On Goodyear Cord Pneumatics

> *"WE have a combination piece of fire apparatus weighing approximately 8,000 lbs., equipped with Goodyear All-Weather Tread Pneumatic Truck Tires. These tires and tubes are the same ones which came on the apparatus five years ago and are good for five years more at least. Up to date these tires have not cost the town a cent of expense. We have never had any difficulty in going through snow in Winter or deep muddy roads in the Spring and the roads are rough and very hilly. The reason for this, I believe, is due to the wonderful gripping power these large pneumatic truck tires with the big diamond shape buttons have on the roads."—W. W. Clapp, Winslow (Maine) Fire Department*

Up in Winslow, Maine, where the winters are long and hard, where the roads are rough and hilly, they find it advantageous to use Goodyear Pneumatics on their Fire Truck.

They find that these tires with their sharp-edged diamond buttons of the Goodyear All-Weather Tread enable them to get to all fires quickly, surely and safely, even in the winter time when the snow lies thick on untracked roads.

Mr. Clapp of the Winslow Fire Department notes, too, the long wear of Goodyear Pneumatics, stating that although they have been in use for five years they are still in good condition and have not cost one cent for repairs.

Thus these features of traction and long wear, plus that other great feature of remarkable cushioning power, are the plain reasons why Fire Chiefs in hundreds of American Cities are equipping their fire apparatus with Goodyear Cord Pneumatics.

They are the reasons why you, too, should insist on these tires for your trucks. Go to the nearest Goodyear Truck Tire Service Station Dealer and work out with him the sizes of these tires that will enable your department to have the above advantages.

GOODYEAR
AKRON

might be represented on the Board of Directors, the chairman was selected from among the labor representatives.

"The purpose of the committee is to investigate any conditions which, if allowed to develop, might lead to labor unrest, or disagreements between employers and employes, and to make its conclusions public.

"The committee is not organized as a board of arbitration. If permitted to function to its fullest extent, the Committe on Industrial Relations of the Grand Rapids Association of Commerce can render this community a wonderful service."

The following Code of Industrial Relations has been established by the Committee:

Industrial enterprise, as a source of livelihood for both employer and employe, should be so conducted that due consideration is given to the situation of all persons dependent upon it.

The public interest requires adjustment of industrial relations by peaceful methods.

Regularity and continuity of employment should be sought to the fullest extent possible and constitute a responsibility resting upon employers, wage-earners and the public.

The right of workers to organize is as clearly recognized as that of any other element or part of the community.

Industrial harmony and prosperity will be most effectually promoted by adequate representation of the parties in interest.

Whenever agreements are made with respect to industrial relations, they should be faithfully observed.

Such agreements should contain provision for prompt and final interpretation in the event of controversy regarding meaning or application.

Wages should be adjusted with due regard to the purchasing power of the wage and to the right of every man to an opportunity to earn a living at fair wages, to reasonable hours of work and working conditions, to a decent home, and to the enjoyment of proper social conditions.

Fixing a basic day as a device for increasing compensation is a subterfuge that should be condemned.

Efficient production in conjunction with adequate wages is essential to successful industry. Arbitrary restriction on output below reasonable standards is harmful to the interests of wage-earners, employers and the public and should not be permitted. Industry, efficiency and initiative, wherever found, should be encouraged and adequately rewarded, while indolence and indifference should be condemned.

Consideration of reduction in wages should not breached until possibility of reduction of costs in all other directions has been exhausted.

Administration of employment and management of labor should be recognized as a distinct and important function of management and accorded its proper responsibility in administrative organization.

This code is the one recommended by the Committee on Industrial Relations of the Chamber of Commerce of the United States, and was adopted by the Grand Rapids committee, which, after careful consideration, from it.

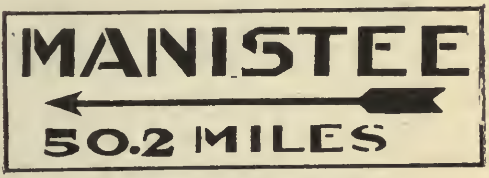
LEE. H. BIERCE,
Secretary, Grand Rapids Association of Commerce.

Tourists Flock to Manistee at the Beck of the Road Sign

MANISTEE, MICH.— In apportioning the publicity fund at their disposal, the members of the Resort Committee of the Manistee Board of Commerce made generous allowance for the erection of road signs and a resort information booth. The results obtained indicate that a more profitable expenditure could scarcely have been made.

Manistee is a resort city located on Lake Michigan. Literally thousands of West Michigan Pike tourists pass thru the city annually. It was the desire of the committee that as many as possible be influenced to make Manistee a night stop or to remain there for a few days. Liberal use of road signs was considered the most effective means of reaching those whom it was desired to influence.

Early in the spring a special car was sent out to "blaze the trail." A sign painter was made a member of the party. He inserted the proper mileage on each sign, as determined by the speedometer. The signs are constructed of galvanized metal, measure 32 x 10 inches, and are mounted on wood frames, as shown in the accompanying illustration. They bear the word "Manistee" and a long arrow denoting direction and mileage. The cost was 70 cents per sign. They are well made and it is believed that they will be in good condition for at least three years.



A Beckoning Road Sign

One hundred and fifty such signs were erected. They were distributed from Grand Rapids to Manistee along the West Michigan Pike and the Dixie Highway. The Muskegon and Montague-Shelby routes, and the Newago,

MUTUAL

America's Greatest

TRUCK

GREATEST, because it is the only truck that is built **wholly** from units and parts that are themselves the greatest achievements of the automotive industry—and are acknowledged to be such by America's greatest technical and practical authorities.

And it is the greatest, too, because it gives the greatest **truck value** per dollar of price asked.

This value-giving is based on two prime factors:

1st On our building our trucks **over-size,** thruout, so that our **two-ton** Mutual is actually a **three-ton** truck, in engine power, carrying capacity and in the size and dimensions of all its parts. Our 3½ and 5-ton sizes are similarly built for a 50% over-load.

2nd On our policy of being satisfied with **less than half** the profit for ourselves, that is customary with truck companies. For the Mutual Truck Company is essentially a Community Enterprise, operated with low overhead cost—an enterprise whose prime object is to build up an **industry** at Sullivan, Indiana, that shall employ thousands of men, and thus create an enlarged home market for the farm products, coal, oil and natural gas with which Sullivan County is so richly blest.

We Make Good Our Claim

We realize that we are assuming a grave responsibility in advertising the **Mutual** as "America's Greatest Truck," and that it is only by fulfilling that claim beyond all question that we can achieve our ambition and win and hold the permanent good will of truck buyers the world over. Therefore we say:

BUY ONE "MUTUAL"

Put it in your hardest service, and let it make its own place in your esteem.

MUTUAL TRUCK COMPANY
SULLIVAN INDIANA

Send for our Super-Specifications; and let your technical and purchasing managers check them, item by item, against the specifications of the best and highest priced trucks on the market.

Fremont-Hesperia routes were vividly marked. Additional signs were placed north to Onekama, Bear Lake, and other resorts in the country.

Entering Manistee from the north or south, the tourist is confronted by these large signs. They stand in striking contrast to the common warning, "Speed limit 15 miles per hour. All violators will be prosecuted. John Doe, Chief of Police." The local welcoming signs say:

YOU ARE NOW IN MANISTEE
We Hope You Will Like Our City.
Drive With Consideration.
COME AGAIN!

These signs indicate a warmth of cordiality that is typically Manisteean. The whole city tries to welcome and entertain the tourist and resorter, not for the dollars that are left in Manistee, but because it prefers to be that kind of city. Incidentally, the Manistee merchants have enjoyed this season the greatest resort trade they have ever known.

A resort information booth was also maintained during the summer months at the south entrance to the city, with two Boy Scouts in charge, distributing to the tourists pamphlets and booklets descriptive of the city and nearby resorts. This service was greatly appreciated, because it frequently enabled the tourists to secure just the information they desired.

J. C. BEUKEMA,
Secretary, Manistee Board of Commerce.

A Vigorous Anti-Litter Crusade

NEW YORK, N. Y.—The goal of the Anti-Litter Bureau of the Merchants' Association is nothing less than *perfectly* clean streets and sidewalks in New York City. The Bureau has been directing its activities toward that end for over two years, and altho a great improvement is noticeable, the desired result has not been attained, and greater efforts are being made, with the aid of the block captains, to put a stop to the violations of the city ordinances pertaining to the cleanliness of the streets and sidewalks. This refers particularly to spitting and throwing paper, fruit peelings and other matter on the city's thorofares.

In an effort to spur the block captains to greater zeal in their work of inspection and in reporting the conditions, the Bureau had large maps made of the boros of The Bronx, Manhattan and Brooklyn, and to each of the one thousand block captains who are working in those boros the Bureau sent the following letter, which includes among other good bits of advice, an injunction to file their reports promptly in order that aid may be given at the moment it is needed:

"The Anti-Litter Bureau has recently prepared large maps of the boros of The Bronx, Manhattan and Brooklyn for the purpose of showing at a glance the general condition of the city. Each block in which there is a block captain has a small pin. This pin may have a white, gray or black head, depending on the physical condition of the block. If the condition is good, a white pin is shown; if fair, a gray pin; and if bad, a black pin. There are comparatively few white pins, a number of black pins and a great mass of gray pins. Of course, we cannot judge the condition of the entire city by a few hundred pins shown on our maps, but we can quickly learn the condition of any street in which there is a block captain. The condition of these streets as a whole is only fair. They should be good. It is our desire, and it should also be yours, to see nothing but white pins in these maps. Whether they are white, gray or black will depend a great deal on the amount of interest you are taking in your duties as a block captain.

"If you do not make regular inspections of your district and make corrections where necessary, it is only natural that conditions in general will get worse each day until they are such that it is necessary to put a black pin in the map in your district.

"May we state that we do not depend entirely on the reports received from the block captains for our information, but from time to time we check up on the work being done by personally inspecting the many districts.

"If there are conditions in your district which, for the good of the community, should be remedied, and you fail to report them, the blame is placed on your shoulders. If there is a broken lamp-post, hydrant, sidewalk, street pavement, or sidewalk obstructions, uncovered garbage cans, overfilled ash cans, bundles insecurely tied, or if you notice dead animals in the street in your district, please do not wait for some one else to make the complaint, but rather communicate with us at once by telephone. * * *"

The Anti-Litter Block Captains are supplied with a pamphlet containing a summary of the "Law and Ordinances Applying to Streets and Public Places in the City of New York, and the Duty of Police Officers and Citizens in Connection Therewith," also a briefer summary of the police regulations regarding streets and sidewalks. The aspirants to the block captaincy are re-

For Construction or Maintenance

Motor trucks for public service, whether for construction or maintenance work, should, above all, be thoroughly dependable.

Lost time means delay in the work, idle men, and lost money.

The proven dependability of Denby trucks appeals particularly to municipal and county department heads, for they have found that their Denbys can maintain any schedule set for them.

DENBY
MOTOR TRUCKS

Denbys are built in a full range of sizes from one ton up.

We have a special folder concerning Denby trucks for municipal and county work. A request will bring it.

Denby Motor Truck Company, Detroit

43

quired first to sign a pledge in which they agree to do certain things upon becoming block captains, and when this is received by the Merchants' Association, a dignified-appearing printed commission is sent to them, announcing their appointment as block captains, with a leaflet of instructions and blanks for monthly reports. Copies of this literature may be obtained from the Merchants' Association upon application.

CLYDE A. COPSON,
Manager, Anti-Litter Bureau of the Merchants' Association.

Chamber of Commerce Owner and Manager of Public Camping Ground

Trinidad, Colo.— The Trinidad-Las Animas County Chamber of Commerce owns the park the entrance to which is shown in the accompanying illustration, and maintains it as a free camping ground. The park covers about ninety acres and is located nearly thirty-five miles west of Trinidad in what is known as the Stonewall Valley. A picturesque natural wall is seen in the background. The section is one of the most beautiful in the state. The park lies directly across the road from the Stonewall Country Club grounds, which is a resort where many Trinidad people have their summer homes.

The camping ground was opened during the summer of 1914, soon after the settlement of the coal strike which had tied up the country for about two years. The strike had produced hard times and much suffering among the strikers and their families, and at the solicitation of the Chamber of Commerce and some prominent citizens in this section, John D. Rockefeller, Jr., was induced to provide a fund of $100,000 with which to build and repair roads thruout the country, among which was the road from Trinidad to Stonewall Park, in order to furnish employment for some of the men.

The Colorado Fuel and Iron Company previously owned the land occupied by the park, and, after the road was built, was persuaded by one of the State Highway officials to donate the ground to the Trinidad-Las Animas County Chamber of Commerce for use as a public park. It was accordingly deeded to the Chamber of Commerce, which then had the necessary buildings erected and provided a caretaker for the grounds. Ac-

THE ENTRANCE TO STONEWALL PARK, NEAR TRINIDAD, COLO., OWNED AND MAINTAINED BY THE TRINIDAD-LAS ANIMAS COUNTY CHAMBER OF COMMERCE

Another FEDERAL

Federal flusher operated by the city of Cedar Rapids. Iowa.

Modern Street Cleaning With a Federal Flusher

Over 2,700 miles of street flushed cleaner than ever before, by two motor trucks as compared to twenty horses, and actually saving $12,150 in one year.

That, indeed, is an accomplishment worthy of investigation by every Street Commissioner in the United States. And it is one of the outstanding features in the annual report of Andrew Macaullum, Commissioner of Streets in Ottawa, Canada.

Jackson, Mich., Salt Lake City, Canon City, Colorado, Cedar Rapids, Ia., Vicksburg, Miss.—and countless other municipalities have adapted Federal trucks to street flushing units at enormous savings to the taxpayers.

Investigate the possibilities of a Federal in **your** town or city. Write for more specific data on prices, types, etc.

"Traffic News"—a monthly magazine
of haulage—sent free on request

FEDERAL MOTOR TRUCK CO.
34 FEDERAL STREET DETROIT, MICHIGAN

FEDERAL

One to Five Ton Capacities

"Return Loads Will Cut Your Haulage Costs"

knowledgment of the donation is made on the sign-board, the bottom line on which reads, "Ground Donated by the C. F. & I. Co."

A gap in the beautiful wall in the picture is the gateway to some wonderful mountain parks. These are being extensively developed by the Government in coöperation with local communities. Next year a new recreation park will be opened north of Stonewall, and other parks will be established in the San Isabel Forest Reserve. Unfortunately there are not accommodations in the park now maintained by this organization for any but those who bring their own camping outfits, but the parks which will be developed next year will be provided with cabins, and it will be possible for those who wish to do so to build cabins for themselves.

FRANKLIN P. WOOD,
Secretary, Trindad-Las Animas County Chamber of Commerce.

New Bulletins

ASHTABULA, OHIO.— *Chamber of Commerce Bulletin,* issued by the Ashtabula Chamber of Commerce.

BROCKTON, MASS.— *Brockton Chamber of Commerce Bulletin,* issued monthly.

CHATHAM, ONT.— *Chatham Chamber of Commerce Pep,* issued monthly.

GRAND ISLAND, NEB.—*Grand Island Commercial Bulletin,* published monthly by the Grand Island Commercial Club.

MIDDLETOWN, N. Y.— *Middletown Chamber of Commerce News Letter,* issued weekly to the membership.

MT. VERNON, OHIO.— *Community Service,* published monthly in the interest of Mt. Vernon and Knox County by the Mt. Vernon Chamber of Commerce.

ST. LOUIS, MO.— *Greater St. Louis,* issued monthly by the St. Louis Chamber of Commerce.

SPRINGFIELD, MO.— *Chamber of Commerce Bulletin,* issued quarterly by the Springfield Chamber of Commerce.

WASHINGTON, PA.— *Washington,* published monthly by the Washington Board of Trade.

WEBSTER and Dudley, Mass.— *The Booster,* published monthly by the Webster-Dudley Chamber of Commerce.

Recently Issued Printed Matter

ATTLEBORO, MASS.— An outing program and menu card that are rather out of the ordinary were issued by the Attleboro Chamber of Commerce on the occasion of the Chamber's annual picnic held in September.

BATESVILLE, ARK.—"Batesville and Independence County, Arkansas,— The State of Leading Crop Value," is the title of a folder issued by the Batesville Chamber of Commerce. Another small folder issued by the same organization is entitled, "Batesville, Arkansas, Queen City of the Hills."

BOSTON, MASS.— The Boston Chamber of Commerce has issued its 1918-19 annual report.

CHARLESTON, S. C.—"What the World Needs" is the title of a leaflet telling about Charleston's port facilities issued by the Charleston Chamber of Commerce.

FORT WORTH, TEX.—"Fort Worth — The New Metropolis of the Southwest" is the title of an illustrated booklet recently issued by the Fort Worth Chamber of Commerce. "Fort Worth and Her Wonder Oil Fields" is the title of another booklet.

GODERICH, ONT.— The Goderich Board of Trade has recently issued an illustrated booklet entitled "Goderich," containing information about the city's industries. It has also issued a four-page circular entitled "Some Facts About Goderich."

HARRISBURG, PA.— The September issue of the Harrisburg Chamber of Commerce bulletin contains a summary of the year's accomplishments tabulated in comparison with the various planks in the year's program of work. It also contains the president's annual message to the members and the treasurer's report.

HORNELL, N. Y.— The Hornell Chamber of Commerce has issued a six-page folder containing a "Historical Sketch of Hornell, N. Y., and Surrounding Country."

JAMAICA, L. I., N. Y.— The Jamaica Board of Trade has published a report of the industrial survey recently completed by it.

LOCUST FALLEY, L. I., N. Y.— The Matinecock Neighborhood Association has published its 1919 year book.

NEW YORK, N. Y.— The Central Mercantile Association has published its annual report for the year 1918-'19.

The Merchants' Association has published its year book for 1919. A "History of the War Activities of the Merchants' Association" has also been issued.

NIAGARA FALLS, N. Y.— The issue of the bulletin of the Niagara Falls Chamber of Commerce, *Niagara Falls Citizen,* of October 11, 1919, contains a list of the organization's activities for the first six months of 1919.

OKMULGEE, OKLA.— The Okmulgee Chamber of Commerce has issued an interesting booklet entitled "A B C's of Okmulgee, Oklahoma, The City of Opportunity."

OTTUMWA, IOWA.— The Ottumwa Commercial Club has issued a leaflet giving some interesting facts concerning Ottumwa, "The Retail, Banking, Railroad, Wholesale, Population, Manufacturing Center of Southern Iowa and Northern Missouri."

PARKERSBURG, W. VA.— The Parkersburg Board of Commerce has issued a semi-annual report for the period from February 1 to July 31, 1919.

TAMPICO, MEXICO.— Bulletin No. 1 issued by the American Chamber of Commerce of Tampico, S. C. L., states the objects of the organization and contains a list of the directors, active officers, active corporate members, active individual members, and associate members.

TONAWANDA, N. Y.— In the September issue of *The Tonawandas,* the official bulletin of the Chamber of Commerce of the Tonawandas, is given a summary of the Chamber's important accomplishments.

WEBSTER, MASS.—"Facts about Webster and Dudley, Massachusetts," is the title of a folder issued by the Webster-Dudley Chamber of Commerce.

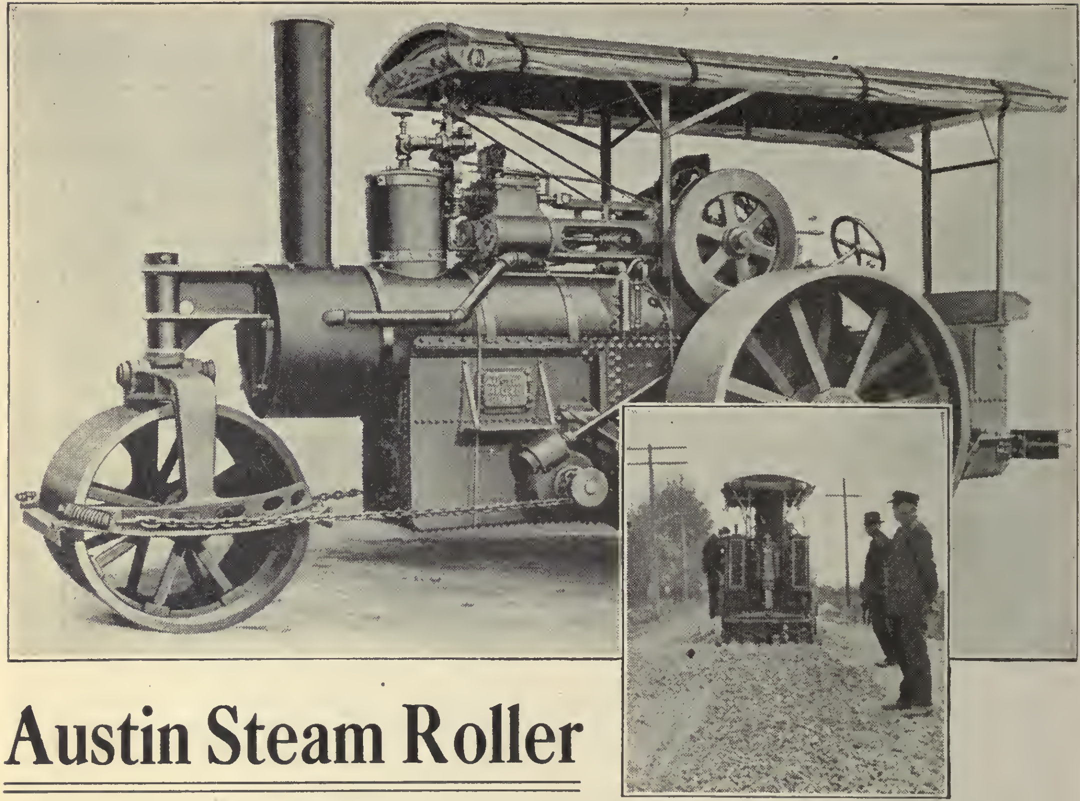
WELLINGTON, KANS.— The origin, purposes and progress of the Wellington plan for home-owning are stated in a circular which has been issued by the Wellington Home Foundation.

WINNIPEG, MAN.—"Where Dreams Come True" is the title of a pamphlet issued by the Winnipeg Board of Trade, detailing some facts about Winnipeg.

THE FINGER LAKES ASSOCIATION, an organization representing the Chambers of Commerce of the Finger Lakes region in New York State, has issued an illustrated booklet describing the beauties of the region and containing several interesting views. The secretary of the Association is E. C. Cooper, Watkins, N. Y.

WISCONSIN ASSOCIATION OF COMMERCIAL SECRETARIES.— The proceedings of the fourth annual convention of the Association, held in La Crosse, Wis., June 10-11, 1919, have been issued.

"Developing the Small Town Organizations" is the title of a pamphlet prepared by Frank J. Green, formerly secretary of the Janesville, Wis., Chamber of oCmmerce.



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LOW HUNG WEIGHT
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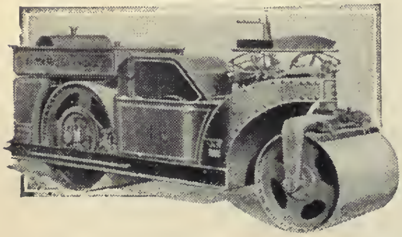
all of which the practical paver appreciates. Added to these are

DURABILITY RELIABILITY

and at least 25% more work done in a given time. These are the reasons why he Austin Tandem leads the market.

During the war the United States and Allied Governments purchased over 700 Austin Motor Rollers, more than ten times their combined purchases of all other rollers, and at higher prices.



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Louisville, Ky.
Portland, Ore.

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Los Angeles, Cal.
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Nashville, Tenn.
Dallas, Texas
Atlanta, Ga.

Jackson, Miss.
Memphis, Tenn.
Philadelphia, Pa.
Charleston, W. Va.
Richmond, Va.
Oklahoma City
New Orleans, La.

Changes Among the Secretaries

A list of recent changes and new appointments occurring among the secretaries of commercial and civic organizations thruout the United States.

Readers are asked to notify the Editors of such changes as soon as they occur, in order that the list may be made as complete as possible each month.

H. E. ANGELL is the new secretary of the Chamber of Commerce at White Plains, N. Y., succeeding Robert C. Turner. Mr. Angell is also secretary of the Westchester County Chamber of Commerce.

T. T. ALLISON, of the Charlotte Consolidated Construction Company, has been elected business manager of the Charlotte, N. C., Chamber of Commerce.

T. J. APPLEYARD has resigned the secretaryship of the Newark, Ohio, Chamber of Commerce. He is succeeded by E. D. Leach of Columbus, Ohio.

ROSCOE C. BANGS has resigned as secretary of the Commercial Club of Rapid City, S. D., to become Publicity Director of the South Dakota Development Association.

BENJAMIN H. BONNAR has been elected secretary of the Greenfield, Mass., Chamber of Commerce. Mr. Bonnar was formerly associated with the Buffalo, N. Y., Chamber of Commerce.

CHESTER M. BECK has been chosen as the new secretary of the Chamber of Commerce at Livermore, Cal.

H. B. BRANCH has been elected secretary of the Chamber of Commerce at Chester, S. C. Mr. Branch was formerly secretary of the Wilmington, N. C., Chamber of Commerce.

E. G. BROWN has been selected as the new secretary of the Board of Trade at Bayonne, N. J.

DANIEL N. CASEY, formerly secretary of the Haverhill, Mass., Chamber of Commerce, and late of the United States Army, has been appointed Chief of the Field Service Bureau of the Pennsylvania State Chamber of Commerce.

T. E. CASSIDY has been chosen as the new secretary of the Kenton, Ohio, Chamber of Commerce, succeeding Mandel Sener, who resigned to accept a similar position at Pittsburg, Kans. Mr. Cassidy was formerly associated with the *Sandusky Register* at Sandusky, Ohio.

J. R. CAVANAGH, chief of the state marketing bureau at Lafayette, Ind., has been elected secretary of the Greeley, Colo., Commercial Club.

M. A. CLAPPER has been elected secretary of the Chamber of Commerce at Hartford City, Ind. Mr. Clapper was formerly assistant cashier of the First National Bank of Hartford City.

JAMES CLOVE, SR., has been chosen as the new secretary of the Provo, Utah, Commercial Club, succeeding R. N. Cooper.

H. A. DAVIDSON has resigned as manager of the Chamber of Commerce at McKeesport, Pa., to accept the secretaryship of the Erie, Pa., Board of Commerce, succeeding William J. Stern.

J. MASON DOUGLAS has been selected as secretary-manager of the Chamber of Commerce of Russellville, Ala.

FLOYD DUNHAM has tendered his resignation as secretary of the Commercial Association at Macomb, Ill., to accept a position with the Oliver Chilled Steel Plow Works at Moline, Ill.

B. C. EVERINGHIM has resigned the secretaryship of the Tyrone, Pa., Chamber of Commerce, to accept a similar position at Franklin, Pa., succeeding J. C. Forester.

J. C. FORESTER has resigned the secretaryship of the Franklin, Pa., Board of Trade, to become associated with Leo L. Redding & Company, of New York City.

JOHN C. FOWLER, formerly secretary of the Chamber of Commerce at Pittsburg, Kans., has been elected secretary of the DeRidder, La., Chamber of Commerce.

H. E. GALE, of Grants Pass, Ore., has been chosen as the new secretary of the Commercial Club at Burns, Ore.

JAMES E. GHEEN has resigned the secretaryship of the Bethlehem, Pa., Chamber of Commerce, and has become associated with the Chicago office of the American City Bureau. He is succeeded at Bethlehem by A. H. Buck, formerly superintendent of the South Bethlehem Public Schools and late with the Bethlehem Steel Company.

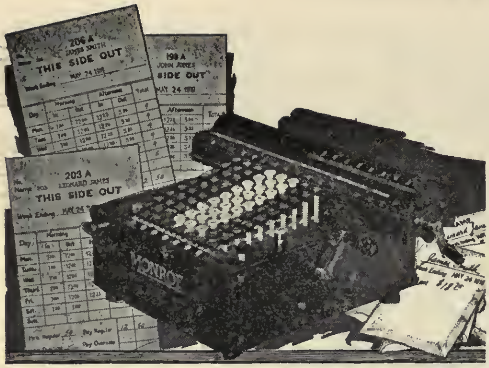
HARRY GILMOUR has been appointed secretary of the Placer County Chamber of Commerce, with headquarters at Sacramento, Calif. Mr. Gilmour was formerly associated with the Sacramento Chamber of Commerce.

ALLAN T. GORDON is the new secretary of the Chamber of Commerce at Danville, Ill., succeeding P. L. Wills. Mr. Gordon was formerly pastor of the Christian Church of Paris, Ill.

A. P. GREGORY has been appointed as the new secretary of the Chamber of Commerce at Guthrie, Okla. George McGregor, whose name was mentioned in the September issue as having been elected to this position, has just resigned the secretaryship at Guthrie.

J PAUL HEINEL of Wilmington, Del., has accepted the secretaryship of the Chamber of Commerce at Martinsburg, W. Va.

J. W. HEDGEPETH is the new secretary of the Chamber of Commerce at Ripley, Tenn.



Turning Time Cards Into Payroll

GETTING out the payrolls is a task in many municipal offices. It usually means much hurry and rush and often overtime work. Even when completed, the payroll department often questions its accuracy.

You can eliminate the hurry, rush and overtime work and at the same time be absolutely assured of the accuracy of the Payroll, if you figure it on the MONROE Calculating Machine.

Every time card, whether at hour or day rate,—with overtime or bonus—can be figured directly on the MONROE, because it **not only Adds, but Multiplies, Divides and Subtracts as easily as other machines Add.** Because of the two-way mechanism of the machine—forward for addition and multiplication and backward for subtraction and division—you can do the figuring in a fraction of the time it takes by any other method.

And there's no guess-work about your answers. You know your figures are correct the first time, without the necessity of rechecking, because the MONROE Visible Check of Accuracy **proves** and **checks** your figures as you go along.

So simple is the MONROE to operate that no experienced operator is necessary; anyone in your office, with a few minutes' practicecan figure any mathematical calculation.

Besides Payroll work, the MONROE will save time, labor and money on figuring estimates, percentsges, costs, extending invoices, footing ledgers, computing interest, in fact on any kind of figure work that you do in your office.

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Let us prove these statements to you with an actual demonstration in your office on your own work. There's no obligation attached—use the coupon.

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A. C. 11-19

Save Money on Your Street Lighting

The cost of installing new standards in your city may be prohibitive.

However, your street railway companies must have trolley poles to support their wires. Why not, then, get them to co-operate with you in securing

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Combination
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which will give you street lighting as fine as any city at a much lower expense than the cost of separate standards?

Wooden poles are an eyesore. ELRECO poles are an improvement and will save you the cost of underground construction, the cost of extra lamp standards, the expense of high maintenance costs.

We have placed ELRECO poles in many leading cities. Let us send you our catalogue showing our complete line.

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New York Office, 30 Church St.

H. F. Henley has resigned the secretaryship of the Albany, Ala., Board of Commerce, to become associated with the Chicago office of the American City Bureau.

Clarence A. Hoopes has been elected secretary of the Marysville, Ohio, Chamber of Commerce.

Raymond V. Ingersoll, Brooklyn Park Commissioner during the Mitchel administration, has accepted the secretaryship of the City Club of New York City.

Richard C. Job has been elected secretary of the Hazleton, Pa., Chamber of Commerce. Mr. Job was formerly associated with the Bethlehem, Pa., Chamber of Commerce.

L. S. Johnson has been elected secretary of the Chamber of Commerce at Frankfort, Ky., succeeding C. Cyrus Wall. Mr. Johnson was formerly secretary of the Northampton, Mass., Chamber of Commerce.

P. A. Jones has accepted the secretaryship of the Chamber of Commerce at Sharon, Pa. Mr. Jones was formerly principal of the Sharon High School.

Glenn Kennedy is the new secretary of the Commercial Club at Springville, Utah.

H. V. D. King has resigned the secretaryship of the Chamber of Commerce at Fayetteville, N. C., to accept the secretaryship of the Goshen, Ind., Chamber of Commerce.

Esther Stock Kroger has accepted the secretaryship of the Kearney, Nebr., Commercial Club, succeeding S. H. Burrows.

Francis H. Lamon has resigned the secretaryship of the Watertown, N. Y., Chamber of Commerce, to assume the management of the New Business Department of the Northern New York Trust Company.

J. David Larson has tendered his resignation as secretary of the Commercial Club at Salt Lake City, Utah, to become commissioner of the Omaha, Nebr., Chamber of Commerce.

Samuel T. Lee is the new secretary of the Yankton, S. Dak., Commercial Association.

Harvey Leebron, of New York City, has been chosen as executive secretary of the White-Williams Foundation of Philadelphia. Mr. Leebron will retain his connection with the New York Community Councils as Consultant in Research and Recreation.

W. C. Long, Jr., has resigned the secretaryship of the Board of City Development at Plainview, Tex., to accept a similar position with the Chamber of Commerce at Dublin, Tex.

E. L. McColgin has resigned the secretaryship of the Troy, N. Y., Chamber of Commerce.

W. A. McElroy has resigned the secretaryship of the Youny Men's Business League of Houston, Tex., to become associated with the Southern Motors Company.

A. D. MacMillan has resigned the secretaryship of the Reading, Pa., Chamber of Commerce, and has joined the field staff of the American City Bureau.

P. E. Magruder has resigned as secretary of the Chamber of Commerce at Bellingham, Wash., to become associated with the Pacific Coast branch of the American City Bureau.

A. F. Marsh has accepted the secretaryship of the Ellenburg, Wash., Chamber of Commerce. Mr. Marsh was formerly secretary of the Citizens Clubs of Chehalis, Wash. He is succeeded at Chehalis by T. J. O'Connor.

A. B. Meehan has been appointed secretary of the Farrell, Pa., Commercial Club, succeeding T. R. Woolridge.

Ralph L. Morrow has accepted the secretaryship of the Chamber of Commerce at Greenwich, Conn. Mr. Morrow was formerly editor of the *Greenwich Press.*

C. M. Murray, of Jackson, Tenn., has been elected secretary of the Chamber of Commerce at Vernon, Tex., succeeding J. D. Parnell, who resigned to engage in the oil business.

Randolph Murdaugh has been elected secretary of the Twin City Chamber of Commerce and Agricultural Bureau of Hampton and Varnville, S. C.

John T. Nielson has tendered his resignation as secretary of the Dayton, Ohio, Chamber of Commerce, to take effect December 1.

William R. Pouder has resigned as city manager of Kingsport, Tenn., to accept the secretaryship of the Board of Commerce of Knoxville, Tenn., succeeding A. L. Chavannes.

J. B. Price has resigned as manager of the Wheeling, W. Va., Chamber of Commerce.

W. A. Roberts has tendered his resignation as secretary of the Chamber of Commerce of Waxhachie, Tex. He is succeeded at Waxahachie by Warren Smith, a student at Trinity University, who will devote part of his time to the work.

W. R. C. Rowan is the new secretary of the Pittsburgh, Pa., Board of Trade. Mr. Rowan was formerly secretary to the president of the Johns-Manville Company and assistant to the president of the Johnston Brokerage Company of Pittsburgh.

J. S. F. Ruthrauff has been elected secretary of the Chamber of Commerce at Philipsburg, Pa., succeeding Henry T. Farr.

E. W. Smartt is the new secretary of the Muskogee, Okla., Chamber of Commerce, succeeding G. A. Gesell.

Ernest N. Smith has tendered his resignation as general secretary of the Indianapolis, Ind., Chamber of Commerce.

Herbert Stanley has resigned the secretaryship of the Greenville, Miss., Chamber of Commerce. He is succeeded by Ned Holmes, of Chicago.

Willard G. Stanton has been elected manager of the Jersey City, N. J., Chamber of Commerce. Mr. Stanton formerly served as assistant manager of the Chamber.

Walter K. Sumner has resigned the secretaryship of the Auburn, N. Y., Chamber of Commerce and has become associated with the Chicago office of The American City Bureau. He is succeeded by John M. Shetland.

Lewis C. Tingley has been elected secretary of the Chamber of Commerce at Xenia, Ohio.

H. M. Van Auken is the new secretary of the Chamber of Commerce at Mason City, Ia., succeeding Clarence A. Bolton.

Where Rear Drive Trucks Cannot Deliver

With its 56-inch standard tread front and rear

—the F-W-D takes its load right up the passenger car driveway, between buildings—or wherever there is a road or path for any vehicle of standard tread.

Carrying the same or greater loads, the F-W-D goes where rear drive trucks cannot go, owing to their excessive width. The F-W-D delivers on *the spot*, saving work, time and money. With load and power equalized on all four wheels, the F-W-D equalizes strains and saves the truck.

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TIFFIN FLUSHERS

So uniformly good is the record of this machine, and so highly endorsed is it by the cities where now used, that NO CITY can well afford to buy FLUSHING apparatus without thoroughly investigating the TIFFIN.

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WATSON Dump Wagons have been known to perform constant and satisfactory service in scores of municipalities for ten years and more without showing any appreciable wear.

City and County officials all over the country find that Watson Wagons are the best—the most durable—and the most economical in the end—for hauling garbage, ashes and refuse and for service in connection with all kinds of construction and road maintenance work. One of the many features of a Watson is the non-sagging bottoms—bottoms that over-lap and "stay-tight."

Send us your address so we can forward you full particulars regarding the Watson line of Dumping Wagons, Tractors, Trailers, and Semi-Trailers.

Watson Products Corporation

Successors to Watson Wagon Co.

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Municipal and Civic Publications

See also Department of News and Ideas for Commercial and Civic Organizations

1919 City Problems.

Conference of Mayors, William P. Capes, Secretary, Albany, N. Y. 1919. 138 pp.

Discussion of the traction problem was the outstanding feature at the 10th anniversary Conference of Mayors and Other City Officials of New York State, held at Schenectady, June 10-12, 1919. Lectures on this subject included: "Solving the Traction Problem by Increasing the Revenues of the Street Railway Companies," by Dr. Thomas Conway, Jr.; "Solving the Traction Problem by a Service-at-Cost Plan," by Harlow C. Clark; "Co-operative Effort in Solving the Traction Problem — Management and Men," by John J. Kerr Caskie; and "The Problem From the Public Point of View," by Delos F. Wilcox, Ph. D. Other special topics treated at the convention were municipal health, the milk problem and municipal finance.

The Zone Plan.

Harland Bartholomew, Engineer. City Plan Commission, St. Louis, Mo. 1919. 82 pp. Illustrated.

This little volume presents in compact form the interesting story of the St. Louis zoning ordinance,— how it was developed, how the public support was obtained, the nature and application of the restrictions, and supporting data in the form of colored maps, charts, photographs, and expert testimony on the benefits and the constitutionality of zoning. For the city planner or city official who must meet the problem of regulating the height, use and area of buildings, this summary of St. Louis's procedure will be most valuable. Enclosed as a supplement are the St. Louis zone ordinance, No. 30199, and amendments to August 13, 1919.

Organized Efforts for the Improvement of Methods of Administration in the United States.

Gustavus A. Weber. With an introduction by W. F. Willoughby. D. Appleton & Company, New York. Studies in Administration. The Institute for Government Research, 1919. 391 pp.

This volume aims primarily to describe those agencies that have been established in recent years for making scientific studies of problems of organization and administration, in other words, for the improvement of the technique of government. It has been limited to these special organizations, altho limited reference is made to other similiar agencies which operate in a broad field. Altho intended primarily for reference, it contains a great deal of information that should be of service to public officials and agencies like Bureaus of Municipal Research in their relations with each other and with those bodies that are aiming to improve the character of state and federal administration. The first part deals with agencies for research — federal, state, municipal and county. In this section four chapters are devoted to the work of official and unofficial bodies for the investigation of particular cities and counties. The second part deals with state organs of administrative control; and the third and last, with legislative reference and bill drafting agencies.

An exhaustive index of nearly 20 pages adds greatly to the value of this book as a reference work.

The Health Officer.

Frank Overton, M. D., Sanitary Supervisor, New York State Department of Health, and Willard J. Denno, M. D., formerly Secretary, New York State Department of Health. W. B. Saunders Co., Philadelphia. 1919. 512 pp., illustrated with original diagrams and charts.

A comprehensive treatise of the work of the modern health officer, containing information which is necessary in his various activities. It describes his relation to boards of health, physicians, social agencies and the public, gives an idea of the necessary qualifications and methods of work, and the various diseases and conditions which he must combat. This will undoubtedly prove a very valuable publication for health officers, students, public health nurses, members of boards of health, special workers and all others interested in the science of public health.

New Schools for Old: The Regeneration of the Porter School.

Evelyn Dewey. E. P. Dutton & Company, New York. 1919. Second Edition. xiv + 337 pp.

This story of the transformation of a small, poorly equipped rural school in Missouri into the active center of an awakened community should be a constant source of inspiration and help to community organizers. How the live teacher of the school, Mrs. Marie Harvey, first interested the community in improving the school building, then closely related all the work of the school to the life of the community, how she applied scientific methods to the farm and household work of her own home, thus demonstrating the value of such methods to her neighbors, and how she gradually enlisted the coöperation of the entire community in the betterment of their economic and social life, have been ably told by the author.

Pauper Burials and the Interment of the Dead in Large Cities.

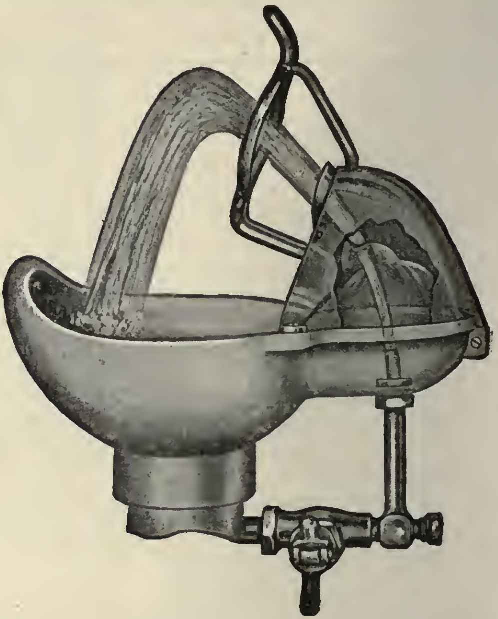
Frederick L. Hoffman, LL. D. Published by the Prudential Insurance Company, Newark, N. J. 1919. 123 pp.

This book emphasizes the need for a more careful consideration of the problem of pauper burials on the part of every municipality. The mass of material which the author has collected on this important subject is noteworthy for the interesting manner and kindly, humane spirit in which it is presented. Besides many descriptive accounts and statistics of burials and funerals in this country, a few admirable funeral and burial practices of foreign cities are described, and a number of practical suggestions for the reform of our present customs are made.

The Billboard Nuisance.

A group of arguments against billboards and an appeal to the Massachusetts State Legislature to take action. 4 pp. (Issued, 1919, by Edward T. Hartman of the Massachusetts Civic League, 3 Joy Street, Boston, Mass.)

Puro



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WE say "Pure" advisedly—because the Puro Liberty drinking fountain is the nearest to 100% sanitary than any other fountain manufactured. The trouble with most of the so called "sanitary fountains" today lies in the fact that they are designed with vertical jets. Such a fountain does more harm than good, because the water which has touched the lips may fall back upon the metal top or bubblers and seriously contaminate the source of supply. The next drinker gets the germs. This applies to both the intermittent and continuous flow fountains.

THE PURO LIBERTY FOUNTAIN

is doubly safe—because it has a sloping stream and a mouth guard. It is utterly impossible for lips to touch the jet or for the water to fall back. The Puro is the most sensible and most sanitary drinking fountain on the market today. It fulfills all requirements of cleanliness, economy and design.

Equip your public buildings and parks with Puro Liberty Fountains.

Write us for illustrated descriptive matter.

Puro Sanitary Drinking Fountain Company

HAYDENVILLE, MASS., U. S. A.

Proposed Building Zones for Newark.

This pamphlet, issued September 16, 1919, is a tentative report of the Commission on Building Districts and Restrictions, in Newark, N. J. It discusses the purpose of zoning, New York's experience, the functions of use, height and area districts, analyzing the relative merits of flat height limits as compared to limits based on street widths, the sunshine factor, the relation of area districts to congestion, the non-conforming buildings and their regulation, the proposed Board of Appeals and the legality of zoning as an exercise of the police power. An interesting feature of the ordinanc eis the inclusion for the first time in the United States of a provision limiting the number of families per acre. 44 pages. Write to Herbert F. Swan, Consultant, or Russell B. Rankin, Secretary of the Commission on Building Districts and Restrictions, Newark, N. J.

The Assessment of Real Estate.

An article of the above title by Hon. Lawson Purdy, published as a supplement to the *National Municipal Review* for September, 1919, describes briefly the form of administration, methods of work and equipment found by the author's long experience as a tax administrator to be best adapted to the task of assessing real estate. The value of tax maps and land value maps, field books and card indexes is demonstrated, and the problems of evaluating real estate and appraising buildings and other improvements in a fair and satisfactory manner receive careful consideration. 17 pp. (Apply to National Municipal League, North American Building, Philadelphia, Pa.)

Eighth New York State Tax Conference.

Addresses and proceedings of the conference, held at Albany, N. Y., on January 22-24, 1919. Among the addresses delivered at the conference were several having special significance for municipal officials, namely: "Our Fiscal Difficulties and the Way Out," by Edwin R. A. Seligman; "The Local Governments," by Mark Graves; and "Costs and Needs of the Government of New York City," by Charles L. Craig, Comptroller. 1919. 381 pp. (Apply to Charles J. Tobin, Secretary-Treasurer, New York State Tax Association, 95 State Street, Albany, N. Y.)

Census of Telegraphs and Municipal Electric Fire-Alarm and Police-Patrol Signaling System for 1917.

This census contains statistics and explanatory text on land telegraph, ocean cable telegraph and wireless telegraph systems, and on the number, location and types of municipal electric fire-alarm and police-patrol signaling systems in use in the United States in the year 1917. Issued 1919. 61 pp. (Apply to Sam L. Rogers, Director, Bureau of the Census, Department of Commerce.)

How to Fight Venereal Diseases in Your City.

A program of medical, educational and law enforcement measures; a broad view, and a definite, practical plan of work. Quarto, 24 pp. September, 1919. (Issued by the United States Public Health Service, Washington, D. C.)

Progress of the Memorial Building Movement.

Considerably over 200 cities in the United States have definite memorial building projects under way, and in addition 14 states are planning memorial buildings, and two national projects are being financed. A descriptive list of these projects is published in Bulletin No. 7, issued by the Bureau of Memorial Buildings, War Camp Community Service, 124 East 28th Street, New York. 1919. 30 pp. Illustrated.

Community Halls.

The text of an act of the Ontario Legislature providing for government aid to rural communities for the purpose of erecting community halls and establishing certain regulations concerning their construction, also a number of interesting architect's designs of both exteriors and interiors, are included in a 16-page pamphlet issued August, 1919, by the Department of Agriculture, Toronto, Ont. (Apply to H. Boylen, Secretary to the Department.)

Town and City Beautification Depicted on Lantern Slides.

A list of the lending collection of lantern slides on town and city beautification which has been prepared by Indiana University, with descriptive notes, suggestions for campaigns for city beautification, and a short bibliography, are included in a bulletin of the Extension Division of the University under the title, "Town and City Beautification." 1919. 16 pp. (Apply to Extension Division, Indiana University, Bloomington, Ind.)

Social Engineering in Cincinnati.

The pleasing make-up and well-chosen illustrations of this little pamphlet containing the annual report of the Council of Social Agencies of Cincinnati cause the reader to approach its pages with more than usual relish. Standards of living, "the new nomenclature for 'dependency and charity,'" are discussed in the opening chapter, followed by chapters on health, citizenship (the new term for "delinquency"), and Cincinnati's special problem of negro civic welfare. The co-ordinating machinery which unites all the social agencies of the city is dealt with in the final chapter, and a financial statement for the year 1918 is appended. 1919. 67 pp. (Apply to the Council of Social Agencies, Cincinnati, Ohio.)

Commission Government.

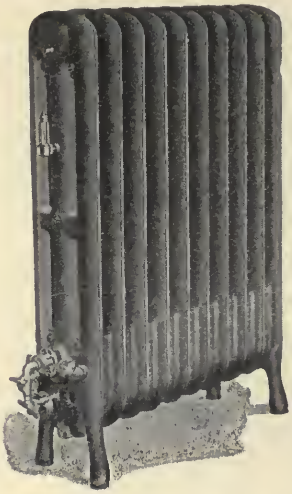
This six-page folder, the first of a series of bulletins on the various types of city government to be presented by the Bureau of Municipal Research of Toronto, sets forth briefly and simply the history and growth of commission government, what commission government is, and its advantages and limitations. (Issued September, 1919, by the Bureau of Municipal Research, 813-820 Bank of Hamilton Building, Toronto, Ont.)

A Suggested Program for Americanization.

This pamphlet, prepared by the General Federation of Women's Clubs, contains an opening statement by Mary S. Gibson, Chairman of Americanization Committee, suggested outlines of study for women's clubs and other organizations on problems of immigration and Americanization in industry, suggested outlines for speakers on Americanization, and a short bibliography of source material. 1919. 36 pp. (Reprinted by permission of the G. F. W. C. and presented by the California Commission of Immigration and Housing, 525 Market Street, San Francisco, Calif.)

STEAM HEAT WITHOUT A BOILER

Why go to needless expense by installing and running a steam, hot water, or hot air plant when



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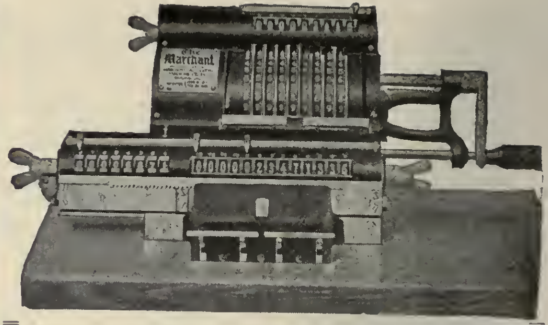

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So says one of our leading county officials in Illinois.

A machine such as the

MARCHANT CALCULATOR

that accomplishes the work of two or three good deputies and proves the work for you as you go along, is surely worth investigating.

City and County officials are equipping their offices with modern devices for the saving of time and energy.
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Or just the simple yet brain tiring multiplication, and divisions you will find that the Marchant will do your figuring for you and do it efficiently too.

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Oakland, California

Methods, Materials and Appliances

News for Boards of Public Works, Engineers, Contractors, Purrchasing Agents, and Others Interested in the Economical Construction and Efficient Operation of Public Improvement Undertakings

Testing the Safety of a Gasoline Tank

Four tests were arranged recently in Ardmore, Okla., to prove the safety of Bowser gasoline tanks in buildings and populous districts. An electric spark plug was installed in the vent pipe of the tank, and while the tank was being filled with gasoline a steady spark was kept going in the vent pipe. All fumes from the pipe had to pass over this spark, but there was no explosion. In the second test the suction pipe on the tank was filled with gasoline and the exposed gasoline on the open end of the pipe was set on fire. However, the fire did not reach the storage tank. In the third test, burning gasoline was poured into the filling pipe, but the fire did not lead down the pipe into the tank. In the fourth and last test 50 gallons of gasoline were put into the tank, then wood, saturated with kerosene, was piled high about the tank, and the fuel was ignited, with the result that the gasoline was soon brought to the boiling point. The vapor escaped both from the vent and from the suction pipes, but in spite of this there was no ignition or explosion of the gasoline in the tank.

It is claimed that Bowser tanks are the only ones that will stand such severe tests as those described above. This tank is manufactured by S. F. Bowser & Company, Inc., Fort Wayne, Ind.

Released from Service

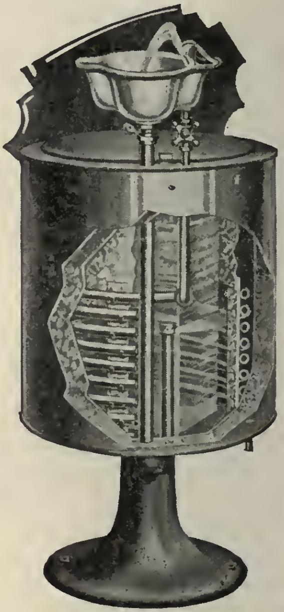
The Baltimore Enamel & Novelty Company, Baltimore, Md., states that on October 1 its factory properties were released from government service. During practically the entire period of the war the Government used the whole of the factory of this company for vital war work because of its complete and modern equipment. Now that the factory has been released by the Government this company will return to the manufacture of porcelain enameled iron products, particularly street signs of high grade enamel, which have been long famous for their wearing qualities.

Strothman Becomes Manager of the Richardson-Phenix Company

Mr. L. E. Strothman, formerly Manager of the Steam Turbine and Pumping Engine Departments of the Allis-Chalmers Manufacturing Company, has recently become Vice-President and General Manager of the Richardson-Phenix Company. These well-known lubrication engineers have established an enviable reputation in the waterworks and power field. Their services are available anywhere in solving problems relating to scientific lubrication.

BOILING GASOLINE TO PROVE THE SAFETY OF A BOWSER STORAGE TANK

Puritan
CANTONMENT
DRINKING FOUNTAINS



Patented
S-570

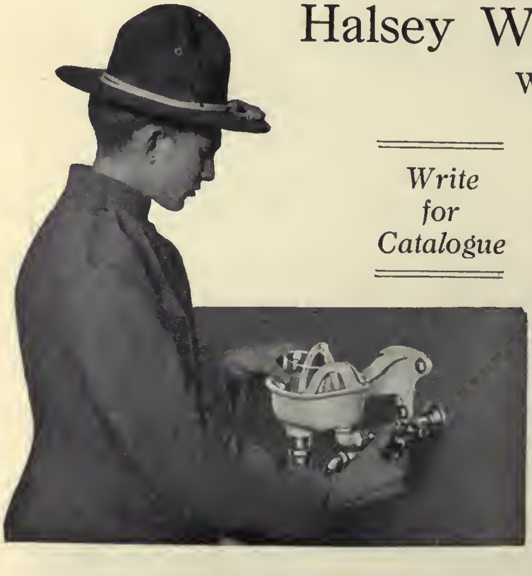
Designed for and adopted by the Government for use in cantonments and Naval Training Stations during the war—now used by the largest industries and schools.

SANITARY—PRACTICAL—FOOL-PROOF

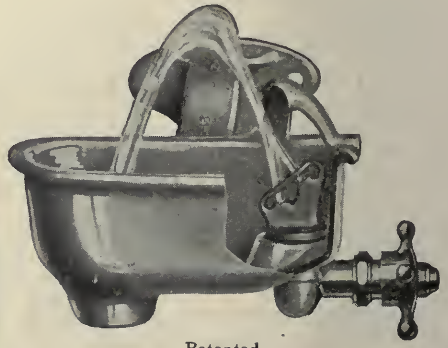
Halsey W. Taylor Company

WARREN, OHIO

Write for Catalogue



PURITAN S-566 "CANTONMENT"



Patented
Sectional View of S-566
Showing Practical Drinking Mound Formed in Stream

Asphaltic Concrete Roads in Panama

Not content with simply building up the environs of the Panama Canal for purely commercial purposes, the United States Government has proceeded far with plans to make the Canal Zone a place of beauty, a comfortable habitat for its residents. Towns have been laid out to accommodate present-day needs, with wide streets and decorative grass plots along the highways, spacious lawns and abundant shrubbery around the employes' quarters and government buildings.

One of the main features of the Government's policy in the Canal Zone is the building of smooth, durable, hard-surfaced roads. Not only must the streets withstand the pounding of motor trucks and other traffic, but they must also withstand the torrential rains of the tropics without disintegration. An example of this is given in the accompanying photograph, which shows a Texaco Asphaltic Concrete pavement on the streets of Pedro Miguel. This photograph also gives an idea of the decorative scheme being used in the Canal Zone, and also the modern system of street lighting with neat electric light posts along both sides of the street.

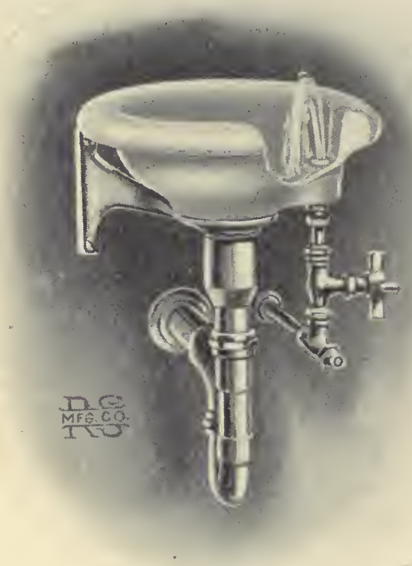
On the main highway running from one town to another the Government is constructing a system of improved highways. The Ancon-Pedro Miguel Highway, for instance, is built of the high-type sheet asphalt pavement which has for decades been the main hard-surfaced pavement in the cities of the world. The same type of pavement has also been used on streets within Pedro Miguel, and the system is being extended as rapidly as possible thruout the Canal Zone. The asphalt and road oils used in the Canal Zone were furnished by the Asphalt Sales Department, The Texas Company, 17 Battery Place, New York City.

A FINE COMBINATION FOR HIGHWAY WORK

A Federal truck owned by Laconia, N. Y., hauling and operating a Burch stone spreader

THE MAIN STREET OF PEDRO MIGUELI, CANAL ZONE, PANAMA, SHOWN HERE IS A TEXACO ASPHALTC CONCRETE PAVEMENT

Vertical Stream Fountain More Deadly Than Common Cup



EXHAUSTIVE and scientific tests conducted by eminent authorities prove that vertical stream drinking fountains are a menace to the public health. It has been shown that the water which has touched the lips can fall back into the jet and seriously contaminate the source of supply.

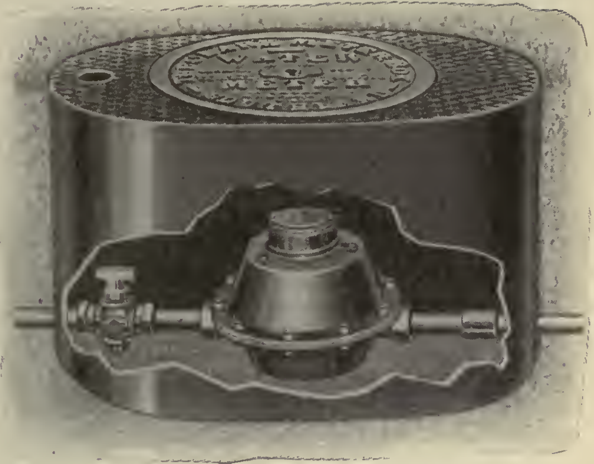
Rundle-Spence "Vertico-Slant" Overcomes All Objections

The "VERTICO-SLANT" is the nearest to the 100% sanitary fountain that can be produced. It is the very latest feature in modern drinking equipment. The stream bubbles out at a practical and convenient angle. Lips cannot touch jet — water cannot fall back. Drinking fountain experts proclaim this fountain as sanitary in every respect — overcoming every objection to the old bubbler type. Ideal for schools, public buildings, parks and streets.

Send address for illustrated descriptive matter treating on the subject of sanitary drinking fountains.

Rundle-Spence Mfg. Co.
Milwaukee Wisconsin

An Oval Meter Box



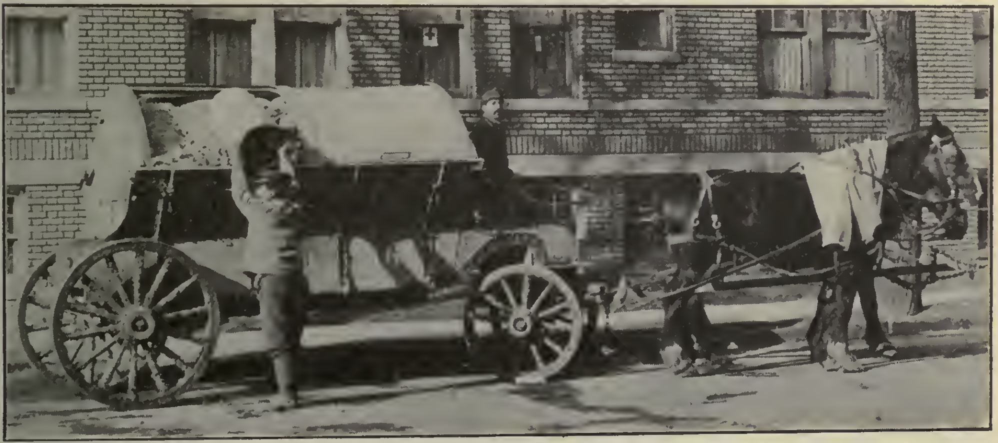
THIS OVAL METER BOX HAS MANY ADVANTAGEOUS FEATURES

In the winter seasons, meter boxes serve as a protective armor to meters even more than during the warm months. They provide air space in the meter to a degree sufficient to prevent it from freezing, in addition to protecting the meter from blows and making it readily available for removal if necessary. The H. W. Clark Company, 130 So. 17th Street, Mattoon, Ill., has just added to its line an oval meter box called the No. 11 Oval Southland Meter Box, which is shown in the accompanying illustration. This combination housing for curb cock and water meter is made of cast iron and has the valuable feature of a locking cover. All parts of the lock are made of solid bronze which is non-corrosive and practically trouble-proof. A key serves as a handle with which to remove the cover, and in order to remove the key it is necessary to lock the cover, thus providing an appreciable safety factor. The meter box can be removed without injuring the concrete pavement or walk in which it is set, as provision is made for securing a lifting hold on the box thru the removal of the circular lid.

Dump Wagons for Collecting Municipal Waste

The collection of municipal waste, garbage, ashes and rubbish in a satisfactory manner is one of the problems which have to be approached by every city in this country. There are certain factors which must be considered in the purchase of wagons for this service. The wagon must not be so high that it will require two or more men to raise the containers to the level of the wagon, it must be sturdy and well built to stand the heavy service which it is called upon to render, and there must be adequate protection against wind which might blow much of the refuse from the wagon while it is being hauled thru the city.

The Watson Products Corporation, 30 Centre Street, Canastota, N. Y., manufactures garbage, ash and refuse collection wagons, both horse-drawn and motor-driven, which are in use in many cities. The accompanying illustration shows one of these wagons in use in Newark, N. J., where the separate collection of garbage and other waste is required. The metal cover prevents the blowing of refuse onto the streets.



WATSON COLLECTION WAGON USED BY THE NEWARK, N. J., BUREAU OF STREET CLEANING AND REFUSE COLLECTION

Studebaker Discontinues Manufacture of Flushing Equipment

WE have discontinued the manufacture of horse-drawn street flushers as well as flushing and sprinkling units for mounting on motor trucks, the steadily increasing demand for Studebaker farm wagons and automobiles making it imperative that we devote more of the existing Studebaker resources to their further perfection and greater production.

But service to municipalities owning or desiring to purchase this type of equipment will not be discontinued.

The Municipal Supply Company, of South Bend, Indiana, has been granted the right to manufacture, from Studebaker designs, these types of municipal equipment. And we feel that by this arrangement there will be available to municipalities the same high quality of service and equipment that we have been proud and pleased to render in the past.

STUDEBAKER
South Bend, Indiana
Wagon Specialists Since 1852

VOLUME XXI
NUMBER 6

The American City

NEW YORK
DECEMBER, 1919

Municipal Salary Crises Far From Imaginary

Cities Must Pay More or Lose Trained Public Servants

Editorial Note.—*Public officials and city councils are slowly coming to a realization of the imperative need of making municipal salaries approximate somewhat more closely the increased cost of living. Within the last few weeks there have been some notable utterances by public men on this vital topic. Governor William N. Runyon of New Jersey on December 6 sounded a solemn warning as to the dark prospects ahead of the state of New Jersey if the communities did not cease the "penny wise, pound foolish" practice of paying starvation salaries to school teachers. Three days later, at a dinner at the City Club of New York, Governor Alfred E. Smith and ex-Governor Charles E. Hughes, speaking to the question of a reorganization of the state government, pointed out that the state of New York, like its neighboring states, is not paying enough money for the service it is receiving.*

It is obvious that if cities are to continue in business and are to retain competent and trained city and county engineers, health officers, superintendents of water and lighting departments, street superintendents, city and county clerks, police and fire chiefs, and the necessary technical staffs of various municipal construction groups, they must pay salaries at least approximating those paid by outside business. The high mortality of technical and trained employes is eloquent evidence of this need.

Fortunately, to some small extent, the cities are awakening, and it is with pleasure that The American City *records the advances, however inadequate they may be, in Rome, N. Y., and Pasadena, Calif., and the more substantial increases recently voted in Norwood, Mass., Newark, N. J., and New York City.*

The American City *uses the word "inadequate" advisedly, for, while no attempt has been made to obtain an actual average, owing to the scantiness of the data, examination of the increases reported shows them to be in the neighborhood of* 10 *to* 20 *per cent, whereas it is generally conceded that the increase in the cost of living since* 1915 *has been not less than* 63 *per cent, and some estimates run as high as* 80 *per cent. It does not require a knowledge of higher mathematics to determine how long governmental employes will consent to struggle for existence while their living costs increase three or four times as rapidly as their pay.*

New Jersey Faces a Crisis in Education—Low Salaries the Cause

Extract from a Statement Issued by Hon. William N. Runyon, Governor of New Jersey, December 6, 1919

A crisis has developed in the public school situation in New Jersey concerning which I feel impelled to warn the people of the state and the members of local boards of school estimate, on whom will fall the problem of fixing teachers' salaries for the coming year.

Unless the people and the members of these boards are aroused to the grave peril that is now threatening, the 600,000 children in our New Jersey schools to-day, and perhaps a whole generation of other children, may be made the victims of a demoralized and broken-down educational system,

New York State Does Not Pay Enough for Service Received

Extracts from an Address by Hon. Alfred E. Smith, Governor of the State of New York, at the City Club of New York, December 9, 1919

The state, if it is to continue its business, has got to meet the competition of outside business. You cannot keep good engineers in the Highway Department, you cannot keep good doctors in the Health Department unless the state can give them at least something near what they can earn in other occupations. Engineers have been in demand for a couple of years, and it is with a great deal of difficulty that the state keeps the services of good men, at the salaries paid.

The People Want No Economy Thru Starvation of Public Servants

Extract from an Address by Hon. Charles E. Hughes, ex-Governor of the State of New York and ex-Justice of the Supreme Court of the United States, Delivered at the City Club of New York, December 9, 1919

I am not at all sympathetic with those who wish to limit governmental outlays for necessary governmental purposes, by making it impossible to give efficient administration. The Governor [referring to Governor Smith] has given many illustrations showing the pressure at this time upon the public purse, and the absolute necessity of raising the compensation of those serving the public. It is perfectly impossible to consider that the people want economy thru starvation of the public servants. They never have. There are demands which must be met for extension of necessary governmental activities in this or in that direction. But the fact that you have the pressure of the existing economical situation, and these continued demands for additional governmental effort, means that you have got to make a serious effort to secure economy of government, or government itself will be seriously endangered by those who threaten the stability of all enterprises, and thus give an opportunity to the agitators who want no government at all.

Rome, N. Y., Chamber of Commerce Reports Advances

To the Editor of The American City:

In reply to your inquiry of recent date regarding increases in the salaries of public officials and employes, we have succeeded in securing the following information:

Mayor, increased from $500 to $1,500 by special act of Legislature
Superintendent of Charities, increased from $1,200 to $1,400
Street sweepers, increased from $2 to $2.50 a day
Teamsters, increased from $5.50 to $6 a day
Water and Sewer Board, all wages and salaries increased 28 per cent
Patrolmen, increased from $95 to $110 a month
Chief, increased from $120 to $133 a month
Assistant Chief, increased from $105 to $115 a month
Station keepers, increased from $95 to $100 a month
Chauffeurs, increased from $95 to $110 a month.

LESTER C. BUSH,
Secretary.

November 15, 1919.

Pasadena, Calif., Also Raises Salaries

To the Editor of The American City:

Your comment that you cannot expect competent management to continue indefinitely on third-rate pay is correct.

The way to lessen the increase in taxes is to employ the best that may be had for the service to be performed. And in order to do this, a livable wage or salary must be paid. Better reduce the number of employes and pay a living wage to those remaining than to attempt to carry on municipal work at starvation wages.

C. W. KOINER,
General Manager.

Comparison of 1918-19 and 1919-20 salary schedules in Pasadena reveals increases of which the following are typical:

Municipal Lighting Works Department

	Per Month	Increase per Month
General manager	$400.00	$66.66
General foreman	225.00	35.00
Chief engineer of power plant	215.00	25.00
Operating engineers	156.00	26.00
Junior operating engineers	145.00	35.00
Adjuster and chief solicitor	165.00	35.00
Solicitors	110.00	10.00
Draftsman	160.00	25.00
Line foreman, heavy crew	170.00	30.00
Line foreman, light crew	160.00	25.00
Lineman	156.00	26.00
Lineman's helper	110.00	25.00
Meter repair men and testers	135.00	25.00
Junior meter repair men and testers	125.00	15.00
Troublemen	135.00	25.00
Miscellaneous electrical workers	110.00	20.00

Water Department

Chief engineer	$275.00	$50.00
Chief draftsman	165.00	15.00
Instrument minor draftsman	135.00	10.00
Superintendent of construction	225.00	25.00
Foreman of construction	150.00	15.00
Caulkers and yarners and sub-foremen	110.00	10–15.00

Construction helpers	95.00	10.00
Meter and service men	115.00	15.00
Meter and service helpers	100.00	10.00
Meter repair men	115.00	15.00
System repair men	120.00	10.00
System repair helpers	100.00	10.00
Machinist	130.00	10.00
Blacksmith	130.00	10.00
Motor truck driver	110.00	10.00
Rangers, mounted	110.00	10.00
Rangers, unmounted	95.00	10.00
Warehouseman and storekeeper	135.00	15.00

Substantial Increases in Norwood

To the Editor of The American City:

With reference to the query which appeared in a recent number of The American City, the following tabulation of salary increases granted by the town of Norwood, Mass., since 1915 may be of interest. I believe these increases will compare favorably with increases granted by the majority of municipalities. Altho the usual number of street improvements and sewer extensions have been made, had it not been for increases in the state and county tax and the debt requirements made necessary by the construction of our new high school building, in all amounting to about $50,000, the tax rate would be under $13 per $1,000. I am pleased to say that as yet we have not been obliged to increase our water or lighting rates.

Position	Per Cent Increase
Town Manager	16⅔
Town Clerk and Accountant	50
Superintendent Public Works Department	44
Town Engineer	41
Chief of Police	43
Superintendent Light Department	44
Superintendent Cemetery	60
Police Patrolmen	63
Firemen	78
Engineers	57
Foremen	66
Laborers	100
Teams	54
Clerks	52
Library staff	36
Cost of living (by Government reports)	80
Tax rate	25

W. P. HAMMERSLEY,
General Manager.

November 15, 1919.

New York Adopts New Wage Scale

In the 1920 budget for New York City as finally adopted there appear the following salary increases for municipal employes:

Police

	Old Rate	Increase
Chief Inspector	$6,000	$1,000
Boro Inspector, Brooklyn and Queens	4,200	600
Inspectors	3,900	500
Captains	3,120	380
Lieutenants on special assignment	.....	400
Lieutenants	2,500	350
Sergeants	1,950	300
Patrolmen	.....	250
Chaplain	1,000	500
Superintendent of Telegraph	.....	300
Asst. Superintendent of Telegraph	.....	300
Surgeon	3,500	400
First grade detective	2,450	250

Fire Department

Deputy Chief	$4,500	$500
Battalion Chief	3,540	450
Captains	2,800	400
Lieutenants	2,350	350
Engineer of steamer	1,800	300
Firemen	.....	250
Medical officer (Battalion Chief)	3,300	450
Chief medical officer (Deputy Chief)	4,200	500
Chaplain	1,000	500

Compensation for all other employes paid an annual salary, except the street cleaning force, which includes sweepers, drivers, auto truck drivers, hostlers, cranemen and dumpmen, is to be determined by department heads.

Up to and including $1,200 a year, 20 per cent increase with a minimum of $100 and a maximum of $200.

Between $1,201 and $1,900 a year, 15 per cent increase with a maximum of $200.

Between $1,901 and $2,600 a year, 10 per cent increase with a minimum of $200 and a maximum of $250.

Newark Policemen and Firemen to Get $2,000 per Year

By a vote of more than 2½ to 1, the citizens of Newark approved last election day the referendum measure advancing the salaries of the policemen and firemen of that city to a maximum of $2,000 per year.

The referendum was opposed by the Real Estate Board and the Board of Trade, not because they do not believe the policemen and firemen should have an increase, but because they were firmly convinced that the question of salary increases thruout all city departments should be studied at once and that the future salary standards of policemen and firemen should be given "consideration in connection with the settlements of just standards of compensation for the whole body of city employes."

The voters, however, have selected the piecemeal method and, as one of the leading papers of the city pointed out the following morning, the result carries with it an obligation upon the City Commission to revise the pay standards of other city departments.

The new schedule, which went into effect December 1, will make Newark's policemen and firemen the highest paid in the country.

Rochester Studies Its Problem of Refuse Collection

An Analysis of Present Methods and Proposals for the Future by the Rochester Bureau of Municipal Research

THERE are two general systems or methods of collecting refuse in American cities—the combined system and the separate system. The system to be employed depends largely upon the methods of disposal, of which there are six in general use: dumping upon land; dumping into water; plowing or burying in soil; feeding to animals; reduction; and incineration. Garbage alone can be disposed of by any one of these methods; dumping and incineration are the only practicable methods of rubbish disposal; and ashes, of course, can be disposed of only by dumping. In Rochester ashes are disposed of by dumping upon land, rubbish by incineration, and garbage by reduction. The fact that three different methods of disposal are in use necessitates the separate system of collection. Collection and disposal may be carried on together or separately, by municipal forces, or under the contract system. At present all refuse originating in the city of Rochester is collected by city forces and disposed of in plants owned and operated by the city.

A LOADING HEIGHT 6 INCHES LESS WOULD MAKE THE WORK OF LOADING MUCH EASIER

Magnitude of Rochester's Problem

The importance of the local collection problem may be understood when it is considered that the cost of the service in Rochester in 1917 was approximately $320,000. This was for labor and teaming only, and excluded the cost of administration, supervision and office expense, which would amount to no less than $50,000 additional. In 1917, 114,149 loads of ashes, rubbish and garbage, totaling approximately 228,896 tons, or 513,934 cubic yards, were collected. In terms of averages, every person in Rochester (estimated population 260,000) was responsible during 1917 for the production of approximately 1,760 pounds, or almost 2 cubic yards, of ashes, rubbish and garbage. This refuse was collected by the city at a cost of $1.23 per capita for labor and teaming, and an additional cost of 20 cents per capita for administration, supervision and office expense.

To obtain more effective collection service in Rochester three things were found to be essential: first, the development of

UNSIGHTLY AND ILL-ADAPTED CONTAINERS USED FOR ASHES AND REFUSE

a better organization of the working force; second, the application of engineering principles to the design of equipment and to the development of standard work methods and procedure; and, third, the establishment and maintenance of a proper coöperation between the public and the department.

Present Organization

The areas of the districts vary from one to three square miles, the average being approximately two square miles. Each district is divided into two or three sections, a section corresponding to the area covered weekly by one squad on ash collection work during the winter months. Ash and rubbish collections are made by laborers working usually in single gangs of from eight to ten men under the immediate direction of a squad foreman.

As stated, the collection and disposal of garbage is in charge of a separate organization unit in the Department of Public Works. This "garbage bureau" includes two subdivisions, one for collection and the other for disposal, and is headed by a superintendent who reports directly to the Commissioner of Public Works.

Plan of Reorganization

In developing a plan of reorganization there are several factors which must be considered, each in its proper relation to the others. Among these the following are important:

The kind and number of functions involved
The area, topography and geographical layout of the territory to be served, together with probable future growth
Present and future population and density of population
The standard of service required
The work methods employed
The class of labor available

It is believed also that any plan to be successful must be based upon the establishment of a permanent force operating under proper conditions as to basis of employment, training and supervision.

A thoro study of the problem leads to the conclusion that the sanitary services of the Department of Public Works, including street cleaning, refuse collection and refuse disposal should be combined in a single organization unit to be known as a Bureau of Sanitation. This bureau would include:

1. Division of Street Cleaning and Refuse Collection—the field work of street cleaning, snow removal, ash, rubbish and garbage collection, and the disposal of ashes
2. Division of Stables and Shops—the maintenance and repair of street cleaning and refuse collection equipment, and the maintenance and operation of municipal stables
3. Division of Refuse Disposal—the dis-

posal of garbage, and rubbish reclamation and disposal

The Division of Street Cleaning and Refuse Collection is of special interest in this report. It is suggested that this division be organized to have five geographical units, each in charge of a single responsible officer who would delegate the several functions under him to assistants.

One important part of this suggested new organization would be the placing of supervision over garbage collection in charge of the same organization that is responsible for ash and rubbish collection. This would be effected by providing in each of the five districts an assistant district superintendent responsible only for garbage collection.

In general, the work methods in use in Rochester are believed satisfactory. Ash and rubbish collections are made daily in one district, special ash collections are made from large establishments in other districts as need arises, and trade waste is collected from factories and business places on request. In the residential districts collections are made weekly in winter and twice a month during the summer, the change being made during May and October. A collection gang consists of the squad foreman, from eight to eleven men, one rubbish wagon, and from three to five ash wagons, depending on the heaviness of collections, length of haul, and number of loaders. The usual procedure is divided into three operations:

1. The filled receptacles are trucked from their place of storage on the premises to the curb. Two-wheeled hand trucks are used for this, and three or four of the men in the gang are employed.

2. The contents of the receptacles are loaded on the wagons, one man working with the rubbish wagon, and three or four loading ashes.

3. The empty receptacles are returned to the rear of the premises. One man usually takes care of this.

Where large quantities of refuse accumulate at regular intervals, as in the case of schools, factories, etc., located in residential district, collections are made by special "pick-up" teams, accompanied by one or two men. A considerable loss of efficiency would result if an ordinary collection gang were assigned to do this work in conjunction with its regular routine house collections. The producer is charged for the collection and disposal of trade waste at the rate of 3 cents per barrel. Garbage is collected from the receptacles at the rear of the premises and carried to the wagons in

HOW THE PUBLIC RUBBISH CANS FAIL TO SERVE THE PURPOSE FOR WHICH THEY WERE INTENDED. THE CAN IS BEING USED AS A NEWS-STAND tubs. When the load is nearly completed, the driver drives around after special pick-up collections, then returns to the disposal plant.

The three down-town routes each have some residential sections which receive weekly or semi-weekly collections. On these routes the general practice followed is to collect from some of the residential streets each day. These collections are made early; later the scattered daily collections are made.

The present ash and rubbish wagons are fairly satisfactory as regards size, and meet the various demands as well as could be expected of any one type of vehicle. There is no doubt, however, that if the loading height of the ash wagon now in use could be reduced to 4 feet 6 inches, one less loader in each gang would be needed for ash collection, and a saving of several thousand dollars annually would result.

The bodies of all types of collection vehicles should be tightly enough built to prevent leakage of refuse, and should be provided with covers adequate to prevent scattering from the tops of loads. The loose canvas covers now in use do not entirely eliminate the dust nuisance, and experiments to develop a better type of cover are recommended. Collection vehicles should be designed to unload quickly and easily. The ash wagons now in use are bottom dump, and the rubbish and garbage wagons are dumped to the rear by the use of special hoisting devices. It is desirable that all vehicles, and especially those used in garbage collection, may be easily cleaned. The decay of material encrusted on these wagons is responsible for most of the odor prevalent about them.

Improvement in Collection

From consideration of the entire problem, with especial attention to comments made by the public, it is believed that improvements can readily be made in the manner in which the work is done. Suggestions to this end are summarized in the following:

1. The working hours and routes of the garbage collectors should be adjusted to make possible two things: (a) that these collectors work a full eight-hour day, six days a week, as is required of the remainder of the collection force; and (b) that collections be made regularly the stipulated number of times each week from each stop, and, in particular, as nearly as possible on the same day or days each week.
2. Work schedules should be arranged for ash and rubbish collection so that collections will be made from each stop with regularity and as nearly as possible on the same days of each week.
3. Greater care should be taken to prevent the scattering of refuse, especially garbage, about premises and streets.
4. Garbage wagons should be kept covered at all times.
5. The unnecessary banging of receptacles, the rapid driving of noisy vehicles over rough streets, and other unnecessary and undesirable noise should be eliminated, especially in the early morning hours.
6. Not only should the garbage wagons be frequently and thoroly cleaned, but the householders should wash out and thoroly clean their receptacles each time collections are made.
7. Care should be taken that all the rubbish possible be collected in the rubbish wagons and not drawn to the ash dumps. This is a matter not only of supervision, but one that demands improved coöperation from the public in the proper separation of rubbish from ashes in separate containers.

The Cost of Hauling

The cost of hauling represents approximately one-half the total cost of refuse collection. In addition to this, the means employed and the efficiency of the hauling service have a direct bearing upon the effectiveness and cost of the remainder of the work. The matter of hauling, therefore, is of primary importance.

All hauling of ashes and rubbish is done by privately-owned teams. The wagons used in ash collection are also privately owned, but are purchased thru the agency of the department to insure uniformity. Payment for these wagons is made by team owners on the instalment plan. In regular house-to-house collections of ashes the teams are paid at the rate of $1.10 to $1.35 per load. In each district the rate is fixed for the dump used, according to the average length of haul. This is done in an attempt so to regulate the rate of pay that teams working in all parts of the city may make a reasonable daily earning. Special teams sent out to collect trade waste and ashes accumulated in large quantities are paid a fixed rate of 75 cents per hour.

Teams employed in rubbish collections also are paid a fixed rate of 75 cents per hour. The wagons used in this work, however, are built, owned and kept in repair by the department, and are loaned to the owners of the teams employed in rubbish collection. The teams and equipment used in garbage collection are owned by the city.

Payment for hauling on the unit basis as practiced in ash collection work is undoubtedly the most practicable method that can be employed in dealing with the large number of teams necessary, so long as the teams are hired. But it has several decided disadvantages. A better solution of the problem seems to be either municipal ownership and operation of the teams and equipment used in collection work, still retaining the present method of team hauling, or motorized equipment. The final determining factor of these two possibilities depends in the last analysis upon their relative economies in meeting local requirements.

Testing the Value of Motor Equipmeut

Motor equipment might prove more economical than team hauling in one city and more costly in another. This is a question of comparative costs, which must be determined for each locality.

The largest factor to be considered is the relative time spent in loading and hauling. Unless hauls are long, the loading time in collection is bound to be high. Where the refuse can be delivered to a central unloading station and from there hauled to the point of disposal, without doubt there is advantage in the use of motor vehicles for the second part of the operation. But it is believed that relay stations are not necessary and would not prove satisfactory in Rochester, as the average length of haul is about 1½ miles. A comparison of costs of motor vehicles and city-owned and hired teams follows:

Method of Hauling	Cost per Day	Cubic Yards per Day	Cost per Cubic Yard
Motor equipment..	$12.69	36	$0.353
Hired teams.......	6.00	20	0.300
City-owned teams..	5.66	20	0.283

The economy of horse-drawn collection equipment under present conditions in Rochester is evident. It also appears that it would cost less to collect ashes with city-owned teams than with hired teams. Two motor trucks, already purchased, will replace from four to six teams in collecting large accumulations of ashes. It is recommended that the city purchase four motor flusher trucks for street cleaning work in summer, with interchangeable bodies so that they can be equipped with tanks for flushing and sprinkling, or with 6-yard dump bodies for ash collection and snow removal work in winter. A 1½-ton truck should be purchased for pick-up work in garbage collection, and a 2½-ton truck equipped with a 3½-yard body of the rear dump type could be used to advantage for garbage collection where the length of haul is approximately 6½ miles. If this limited amount of motor equipment is operated, experiments can be conducted with it to determine more accurately whether other motor equipment would be economical, and if so, in what districts and in what class of work.

Stringent Regulations Should Be Enforced

In all frankness it must be stated that the department comes much nearer to fulfilling its obligations to the public than the public does to conforming to the requirements made of it. It is evident that steps should be taken to bring about a better public understanding of the problem of refuse collection. Certain changes in and additions to the ordinances governing the work would aid in solving the difficulties now encountered. Suggested procedure to accomplish both results is outlined in the following:

1. All laws, ordinances and rules relating to the separation, storage, collection and disposal of refuse and to the work of street and sidewalk cleaning should be revised and combined in a sanitary code. This code should be printed and distributed among all householders and property owners as well as members of the sanitary forces, the police and other interested persons.
2. A section should be added to this code to include definitions of all terms used and a complete classification of refuse.
3. Provision should be made for enforcing the provisions of the sanitary code. For this purpose it is believed that all officers of the proposed Bureau of Sanitation should be empowered by law to issue warnings and to serve summonses for violations of the code.
4. A comprehensive campaign for the education of the public as to its duties, responsibilities and rights should be undertaken. This is essential, since without hearty public coöperation existing undesirable conditions cannot be corrected. It means, in effect, that the department must take the public into its confidence and explain the motive back of its regulations. To accomplish the desired result all available means of publicity should be used, including newspapers, schools, local welfare and improvement societies, etc.

Chicago Plan Bond Issues Endorsed by Citizens

By Charles H. Wacker

Chairman, Chicago Plan Commission

CHICAGO has taken another great step forward. In the early fifties the city was raised 14 feet out of the mire, a tremendous task for that time. In the sixties the foundation was laid for the system of parks and boulevards, Chicago's main attraction to-day. After the great fire of '71 the rebuilding of Chicago challenged the admiration of the world. In the eighties began the construction of the drainage canal, which reversed the current of the river, changed Chicago from a city cursed by contagious diseases to one of the most healthful in the world, and which will make possible the Lakes-to-the-Gulf deep waterway.

In 1893 came the World's Fair. Out of it grew the Plan of Chicago. It supplied the inspiration which resulted in the great demonstration of the faith which the citizens of Chicago have in their city, when on last election day they adopted by a vote of more than two to one six bond issues totalling $28,600,000 for improvements.

The first of these proposals related to the Western Avenue widening, estimated to cost $2,400,000. Western Avenue is open from city limits to city limits, a distance of 26 miles, and varies in width from 50 feet to 330 feet. Where it is less than 100 feet wide to-day it will be widened in order to provide a minimum width of 100 feet thruout.

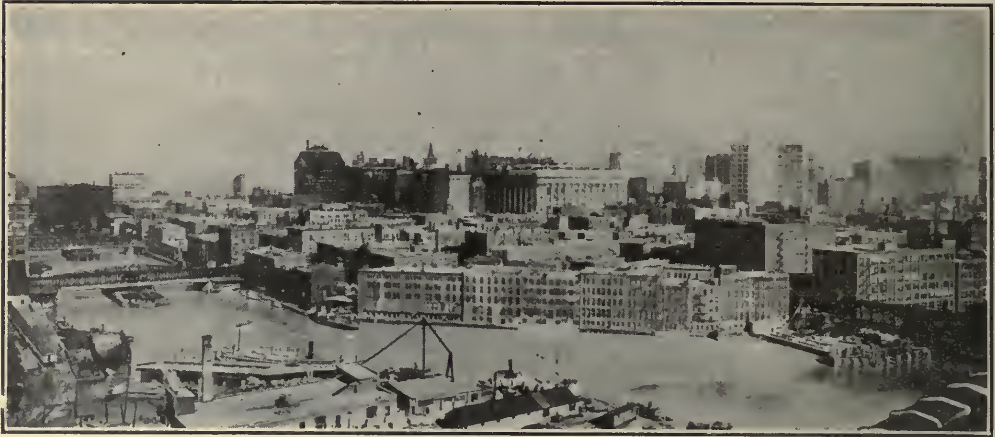
The second bond issue, relating to Ogden Avenue, carries with it the sum of $5,400,000. Ogden Avenue will be opened to a width of 108 feet for a distance of three miles diagonally across the city from Union Park on the west side to Lincoln Park on the lake on the north side, thereby providing a short and direct traffic artery between the north side and the west side. It will relieve congestion in the loop district and give a large industrial population direct and convenient access to an industrial section, to Lake Michigan, Lincoln Park and the municipal pier.

The third proposition, relating to South Water Street, carries the sum of $3,800,000 and provides for the creation of an upper-and-lower street 135 feet wide for a mile along the banks of the Chicago River, connecting with the upper and lower levels of Michigan Avenue, and with the present street grade at Market and Lake Streets. This improvement will save the people approximately $6,500,000 per year by the removal of the produce market to a proper location. The saving from this one improvement alone in five years is estimated to exceed the total of the bond issues for all the other improvements.

The Robey Street proposition, costing $9,200,000, is the most difficult and expensive of the three west side improvements, as it has to be made in a district occupied by a number of railroad yards and large industries. Robey Street at present is closed at nine different places and varies from 30 feet to 100 feet at nineteen different places. It is to be made 84 feet wide thruout.

The Ashland Avenue proposition contemplates the widening of Ashland Avenue to 100 feet from city limits to city limits. At present Ashland Avenue is closed at four places and varies in width from 42 feet to 100 feet at 28 different places. The bond issue for this improvement amounts to $5,800,000.

The sixth and last of the Chicago Plan bond issues is related to the Michigan Avenue improvement. This is a $2,000,000 proposition, which provides for the completion of the two-level improvement of Michigan Avenue for the distance of a little more than a mile north from the center of the city, to provide a new, direct thorofare between the heart of Chicago and the north side. This street will have an upper and a lower surface for nearly all of its distance. The street has been widened from 66 feet to 130 feet from Randolph Street to the river, and from 66 feet to 141



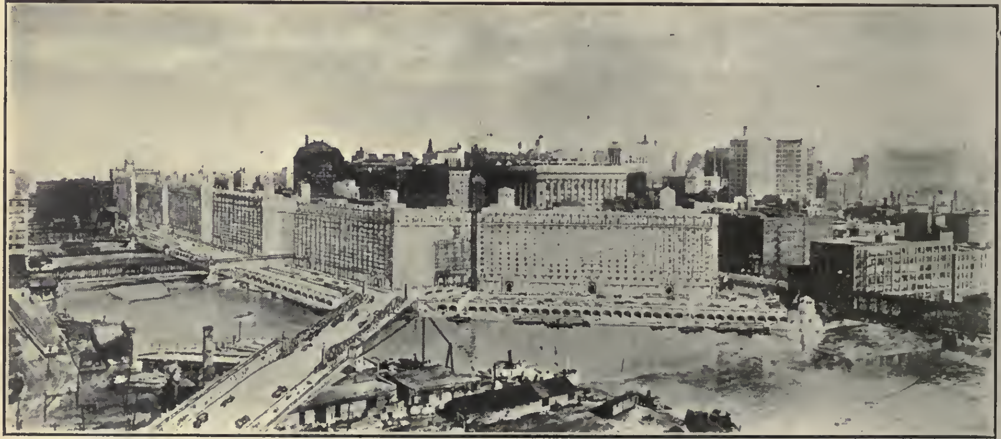
SOUTH WATER STREET, CHICAGO, AS IT LOOKS TO-DAY FROM THE OPPOSITE BANK OF THE CHICAGO RIVER

feet from the river north to Chicago Avenue, where it connects with the Lake Shore Drive.

This is the third bond issue that the people of Chicago have approved for Michigan Avenue, the last two issues being necessary to cover the increased cost of material and labor due to the war. The upper-and-lower street plan was adopted in order to segregate traffic. The new street will prevent more than 45,000 north-and-south-bound vehicles from interfering with some 15,000 east-and-west-bound vehicles every day. This enormous congestion causes an annual loss to the city of Chicago of $2,000,000, which will be saved when the new thorofare has been completed. War conditions, steel strikes, etc., have delayed the work, but it is confidently expected that the improvement will be finished by the 1st of April, 1920.

It should be borne in mind that the bond issues represent only the city's share of the cost of these public betterment projects, and that the total cost thereof will be at least double the amount of the bond issue.

The wonderful victory of the Chicago Plan bond issues at the recent election is a direct result of the specific bond issue campaign, and the culmination of the ten years of promotional work of the Chicago Plan Commission.



VIEW OF THE PROPOSED IMPROVEMENTS FOR SOUTH WATER STREET AND THE RIVER FRONT, CHICAGO

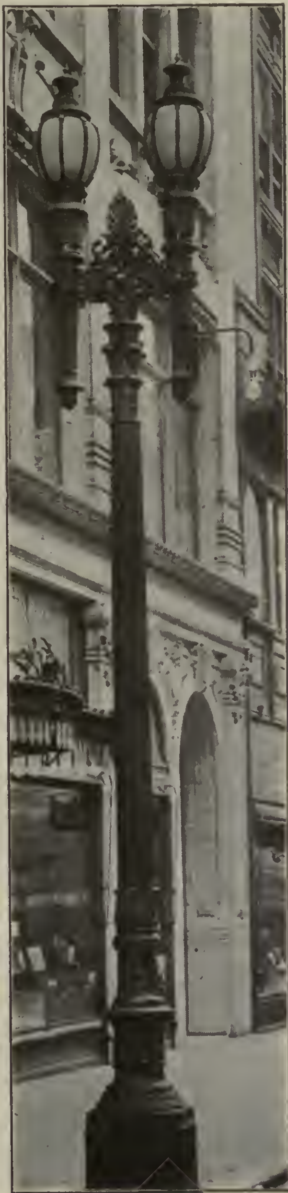
Lighting the Business District of San Francisco

The Use of the Arc Light in the "Triangle" District

THE "Triangle" district of San Francisco is probably one of the best-lighted business districts in this country. An adequately lighted commercial district is a permanent asset to any city. It means much to the merchant thru increased trade, fire protection and freedom from burglary. As a concrete example of the appreciation of such protection, it is interesting to note that the Downtown Association of San Francisco pays one-half the expense of the lighting.

Early in 1916 a movement was started by the Downtown Association to perpetuate some of the features of the illumination of the Panama-Pacific Exposition. Thru the excellent work of this Association the now famous "Path of Gold" became a feature of the lighting of Market Street. So great was the success of this lighting that there were numerous requests for extensions of the system to include the entire retail district of San Francisco, popularly known as the "Triangle." A new standard was designed, and in a very short time sufficient funds were raised to enter into a contract with the local gas and electric company for the lighting.

As in the case of Market Street, the entire proposition, amounting to about $85,000, was financed by the Pacific Gas & Electric Company. Of the total yearly maintenance cost of over $30,000, the property owners and tenants, thru the Downtown Association, pay approximately $16,000, the remainder being carried by the city. Work on the installation was commenced in the spring of 1917, but was stopped by the war. Immediately after the signing of the armistice the system was rushed to completion, and was lighted in the last days of 1918.

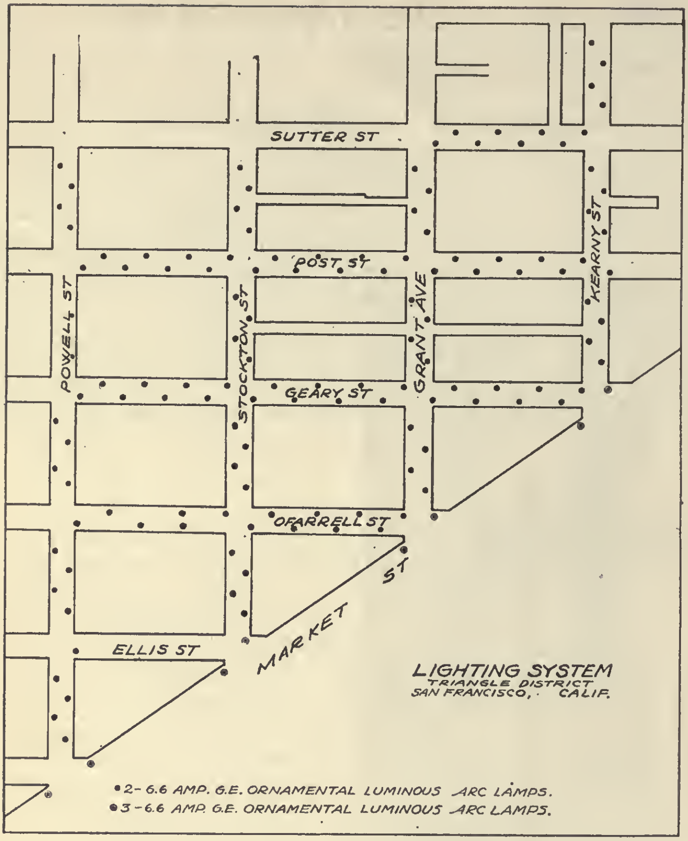


THE ARTISTIC STANDARD USED IN THE TRIANGLE DISTRICT, SAN FRANCISCO, CALIF.

New Ornamental Standards

The old lighting standards thruout the Triangle district were five-light clusters with four 40-watt lamps in the down-turned globes and two 25-watt lamps in the central globe, all the lamps burning all night. As the locations of these standards were satisfactory, the same positions were retained. The arrangement staggered the standards, as indicated in the accompanying diagram, with a lighted standard to approximately each 60 feet of street. With the new standard there are 112 lamps on 56 standards that burn all night and are maintained by the city; the remaining 162 lamps are extinguished at midnight.

The ornamental standard is pure Greco-Roman in design, consisting of the base, and a fluted column with two volutes surmounted by a conventional leaf pattern. The two volutes act as decorative supports for the two ornamental luminous arc lamps, the electrode tubes of which are covered by torches. The weight of the top ornament and the arc lamps is carried by a supporting pipe 4 inches in diameter that is embedded in a concrete foundation. The whole standard weighs slightly over a ton



and stands 22 feet high from the sidewalk to the arcs.

The new system was designed to give an illumination equal to that of Market Street, and accordingly the same type of lamp was used, a 6.6-ampere General Electric ornamental luminous arc with eight-panel ribbed globes; equipped with what is known as the "San Francisco Golden Cararra" glassware.

The idea had been to provide illumination comparable with daylight, giving well-lighted, attractive streets, with the units fitting into the general vista and eliminating glare.

Another feature connected with the lighting of this district was the removal of all trolley poles and the fastening of all trolley span wires to eye-bolts in the building façades.

The Value of Good Lighting to Business

W. D. Fenimore, Chairman of the Downtown Association, made the following statement, which should be considered very carefully by municipal officials and chambers of commerce:

"'Commerce follows the flag' is a trite saying and a true one, and in the same spirit the business districts of large cities follow good street lighting. Every large city in the Union has at some time seen its principal retail district move from the original location, either north, east, south or west, gradually in some cases, and in an almost unbelievably short space of time in other instances. One portion of the town is deserted and the new section becomes prosperous and progresses. In the old district property depreciates and rents go down, while in the new section the reverse is the case. Rarely if ever does the old section recover."

New Pennsylvania Law Compels Architects to Register

An enactment of the Assembly of Pennsylvania signed by the Governor on July 16 provided for the examination and registration of architects by a State Board of Examiners, to consist of five architects, each of whom must have had ten years' or more experience in active practice. They serve for a period of five years with a per diem allowance for expenses for meetings and examinations.

All persons not engaged in the practice of architecture or known as architects at the time of the passage of this Act must submit to examination and be registered by the Board of Examiners before being allowed to practice. The Board may accept as sufficient evidence of competence a diploma from an architectural school and a statement that the architect has had three years' satisfactory experience with a reputable firm of architects. The Board may also accept a certificate of registration from another state or country having similar requirements.

Holders of certificates issued by the Board are required to sign all drawings "Registered Architect." The Act does not prevent other persons from filing plans for building permits, but it does prevent such persons from using the title "Architect" in any form. Violations of the law are punishable by fines or imprisonment.

Two Recent French Planning Reports

By Frank B. Williams

Chairman, City Planning Committee, City Club of New York

THE planning problems at present confronting France are the planning of new cities and parts of cities and the replanning incident to it. These problems have been greatly intensified by the war. Much of northern France has been destroyed and must be planned anew. Vast regions have been so completely devastated that all property lines have been obliterated, while the ownership remains as before. It would be not only better for the property owners, and the municipalities as well, to replot and replan these areas, but also easier and cheaper. Before the war, however, planning and replanning in France, as well as in other countries, were needed. Legislation to cope with these problems had long before the war been passed in many European countries and again and again proposed in France without result. At present, French city planners are endeavoring to make progress in these matters while still handicapped by the lack of laws they have so long needed.

A Plan for Voluntary Effort

One of two recent valuable reports is that of the legal section of "La Renaissance des Cités," a society founded in August, 1916, to study and diffuse information with regard to the principles which should be followed in the reconstruction of French cities destroyed during the war. With this society George B. Ford, formerly consultant in city planning of the city of New York, but now with the American Red Cross in France, is coöperating. The report is a brave attempt to obtain by voluntary action what can only be adequately done under government auspices. The ruined cities are urged to adopt city plans, altho French law does not make these plans binding on property owners; the property owners are urged to unite in restoring their lands and buildings, in order not only that expense may be saved, but also that lot lines may be changed, to the advantage of all, since no method of replanning and replotting by government authority exists.

A Definite Housing Plan

The second of these two reports is that of the "Government Bureau for Low-Priced Housing for the Department of the Seine," or Greater Paris. The questions considered are, first, means of obtaining an increased supply of cheap houses, and secondly, city planning as a necessary part of such housing. Here again the problems are those of the pre-war period, intensified. The cost of houses, too great for low-priced labor before the war, has now more than doubled; the standards for such houses, too low before the war, must, more than ever, be raised. Paris, terribly congested before the war, is now worse than ever.

In the endeavor to relieve the situation, the French Government has given the Bureau 10,000,000 francs and has instructed it not only to increase the supply of adequate low-priced houses, but to relieve congestion, and to proceed along garden city lines. As a first step in these directions—and all it can do with such a comparatively small amount—the Bureau has used the entire sum in the purchase of land outside the city. It announces that it will proceed in accordance with (among others) the following principles:

1. It will create, not garden cities, but garden suburbs.

2. Its operations, both as to land purchase and development and as to housing construction, will be on a large scale.

3. Severe regulations to secure a sufficient supply of light and air, the proper amenities and pleasing esthetic effects, so dear to all Frenchmen, will be imposed.

4. Speculation, not only before but for all time after construction, must be entirely eliminated.

In the search for methods of preventing speculation, the French report, apparently with an entire absence of bias or prejudice, analyzes and discusses the German attempts to accomplish this result, apparently favoring the German "hereditary building right" as a substitute for ownership of the fee, and the German "right of repurchase" as a limitation on ownership, or the retention of that ownership by the city or state, as often practiced in Germany. The report also earnestly urges the French Government to make itself responsible for the difference between present costs and the costs as they will be ten years hence, much as is proposed in England; declaring that only thus can a sufficient supply of suitable houses be seasonably obtained.

The Planning of Industrial Cities

By John Nolen

City Planner, Cambridge, Mass.

WHAT do we mean by an industrial city? Not a city that is exclusively industrial—few cities are that—but a city that is *primarily* industrial, a city whose existence and growth depend mainly upon manufacturing.

What are the planning problems of industrial cities? There are two broad divisions, not mutually exclusive by any means, but they can with advantage be considered separately: those that have to do directly with the economy or efficiency of manufacturing; those that have to do directly with the contentment and welfare of the wage-earner, and indirectly with the economy and efficiency of manufacturing.

The requirements of manufacturing cities are: level land, cheap land, few streets (giving large blocks), room for extension; railroad or water facilities; proper building zones; main thorofares for hauling (no grade crossings); proximity of factory sites to good housing; trolley or motor bus transportation for employes if homes are not within walking distance; location of factories with due consideration to prevailing winds; public utilities (water, gas, electricity and sewers) and water or other power.

Equally important are homes for workmen. Consideration must be given to the house itself; the garden, the protected residential zone; local streets; recreation areas; schools and part-time schools; churches and other social institutions; and main streets to the factory, to low-cost housing districts, and the down-town district, to shops, commercial amusements, public institutions of higher life, civic buildings (government buildings, leisure-time buildings, such as library, art museum, community building for social recreation and discussion, etc.). Consideration must also be given to cost in reference to wages—cost of the home itself, and local taxes.

The difference in the planning of an industrial city and other cities is mainly a difference of emphasis on those things which have to do with economy and efficiency in manufacturing, and with contentment and stability of wage-earners. There is also the difference in cost of planning and developing an industrial city—the same difference of relation that cost of factory building bears to the cost of a church, a public building or a better class residence; that is, cost is justified or fails of justification according to the economic return.

It would be profitable to discuss large vs. small industrial cities. It is difficult to replan existing large cities. There are advantages in replanning small cities, but there are even greater advantages in laying out entirely new industrial cities. They permit deliberate choice of location, based upon regional survey, the development of an efficient plan, and the limitation of area and population.

Some of the economic effects of planning upon costs of production are: proximity to raw materials; the elimination of unnecessary cost of hauling and shipping; reduction in labor turnover; and decent living and working conditions both in homes and in factories.

A study of industrial cities discloses the fact that the power, growth and progress of a city are limited only by the initiative of its leaders and the united civic interest of its people.

ACKNOWLEDGMENT.—From a paper read at the Eleventh National Conference on City Planning, Niagara Falls, N. Y.

Supervised Amusement Cuts Juvenile Crime by 96 Per Cent

Remarkable Results in Binghamton, N. Y., and Vicinity

By William I. Engle

SUPERVISED playgrounds, parks, amusements, manual labor classes and boys' clubs have in five years reduced juvenile crime and delinquency 96 per cent in the industrial center of the southern portion of New York State, according to figures recently compiled by the Broome County Humane Society and Relief Association.

The Endicott-Johnson Corporation, the largest shoe manufacturing concern in the world, has 13,000 employes, nearly one-half of them girls and women. In Endicott, where there is a colony of 5,000 persons of foreign birth, of whom the great majority work in the factories, there is a deserted Juvenile Court room. Fundamentally, this whole section, including Binghamton and the two shoe-manufacturing towns, Endicott and Johnson City, is a factory community.

The problem which confronted welfare workers, officials and civic societies five years ago was the best means of helping a population of young people having the usual factory environment, the ideas and ideals of the ordinary factory worker. The situation was this: Juvenile crime was increasing yearly as the population grew. Boys in the factory and railroad districts were pillaging, burglarizing, committing a dozen kinds of youthful depredation which kept police and Humane Society officers anxious day and night. The time-worn plans of environment, probation, threats, warning and exhortation seemed hopeless.

Playgrounds Decrease Juvenile Delinquency

Then George F. Johnson, general manager of the factory system, proposed playgrounds. The superintendent of the Humane Society and Relief Association, Samuel J. Koerbel, agreed with him, and on this theory the program for supervised amusement parks and societies was begun. It has turned guttersnipes into boys whose fathers are proud of them. It has cleaned the streets of girls of bad repute. It has established a new code of morals among both boys and girls.

Such success of the plan in the factory towns stimulated activity among civic welfare workers in Binghamton. Recreation for young folks, similar in character but not so extensive, has been afforded. A boys' club with every street urchin in the city as a member is accomplishing results much the same as those derived from the playgrounds, and plans for a system of parks are under way.

SLIDE AT A CORNER OF THE SWIMMING POOL IN ENDICOTT, N. Y.

Superintendent Koerbel, in charge of the Juvenile Court, whose gavel is gathering dust, explained the result of the welfare work as shown in criminal records, as shown in the following quotation:

"The young mind must be occupied. Give the boys and girls clean recreation, keep them out of doors, make them interested in something that will drive thieving and street walking out of their heads, and you'll have no more trouble with juvenile delinquents. That is what has been done here, and the court records show the results.

"Where this office five years ago had in one season 100 cases of thievery, burglary and misdemeanors, in the industrial towns this season it had just three cases. The average for the year has been almost as low. The cases of juvenile delinquency in Endicott and Johnson City during the last year were exactly four per cent of the number recorded four and five years ago. From the time of the inauguration of the playground and amusement plan five years ago up to to-day, the decrease in juvenile delinquency and immorality has been swift and steady.

"Five years ago I spent three afternoons a week in court in the factory center. Now I am in court there on an average of twice a month."

Details in the Development of the Plan

As each new advantage was afforded the youngsters, a corresponding decrease in crime was noted. The recreation scheme in the industrial towns is probably more elaborate than in any other community of the same size in the country. The results from the first innovations were so definite and excellent that the experimental plans were followed quickly by a much more comprehensive program.

At the start, the usual supervised playgrounds, like those in scores of other towns, were laid out and built in Endicott and Johnson City under the direction of Mr. Johnson. They included tennis courts, swimming pools and all manner of simple amusements for the younger children—swings, sand pits, seesaws, playhouses.

THE START OF AN EXCITING TUB RACE

As these advantages grew rapidly in popularity, the scope of the work was broadened. A large natural park covering 10 acres along the pleasant Susquehanna River at the edge of Endicott was bought, and many thousands of dollars were expended in beautifying it. The payment was made by the manufacturers in the interest of their employes and employes' children.

Then the real community welfare work began. Extensions were made to an old casino, and a great pavilion was built. This is now the center of community activity winter and summer. Here are held community dances, community domestic service club meetings, sewing classes for girls and women, campaign gatherings, concerts, bazaars, and a half-dozen home economics instruction courses for both juveniles and adults.

Outside in the park there is the finest half-mile race track in this part of the country, four well-kept baseball diamonds, a canoe and boat club housing two score craft, a merry-go-round, a huge skating rink, dozens of swings, sand pits and other things cherished by children, and a grand stand with a capacity of four thousand overlooking the track, rink, ball fields and half the park.

Every day in the week there are special programs of recreation, and on Saturdays thru the warm weather season the crowd sometimes numbers five or six thousand. No admission is charged for any amusement, and nothing in the park has a price.

In the adjoining town of Johnson City, where the other half of the big factory system is operated, much the same plan is in effect, tho on a smaller scale. There, too, are playgrounds and a pool and ball fields.

The Binghamton Boys' Club

In Binghamton there are other ramifications of the plan. Because the city, like so many other average business towns of the East, creeping up toward the 70,000 population mark, has been slow to secure parks for the future, there has been little provision for utilizing the natural beauty spots until this year. Now, however, a great park is to be developed, and the Common Council voted a $50,000 appropriation for improvements.

It is in another phase of the community welfare work, tho, that the city is making a name for itself; that is, in its boys' club. Under the supervision of Mr. Koerbel this club, originally only a few dozen street urchins gathering in a dim-lighted, rather dismal second-story room, has grown into a unique institution. Within the last year a four-story community house has been constructed for the exclusive use of the boys, and the membership of the organization has jumped to nearly a thousand. The results from this boys' club and its auxiliary branches will compare favorably with those brought about by the recreation plan perfected in the adjoining manufacturing center.

NO BAD BOYS IN THIS PARTY

In the single year since the club began its swift growth, juvenile crime in the city has decreased 60 per cent. Altho, because the city population is so much larger than that of the industrial towns, it can hardly be expected that the record of a 96 per cent decrease can be reached, a decrease far beyond the 60 per cent is assured within the next year.

At the club there is much to hold the interest of the boys—reading-rooms, billiard tables, small-game rooms, a gymnasium, classes in carpentry, shoemaking and business, and in some other subjects which perhaps ought to be taught in the grade schools but are not. This winter an elementary class in civics and economics for boys between the ages of 11 and 15 years will be established.

And—more important than all else—there is a bathroom with showers and towels, and water hot enough to erase the marks of the hardest day's work or play. In the last month 551 baths were given at the club to boys who have no bathing facilities in their homes.

Next door to the club-house is the administrative building of the Humane Society and Relief Association. In this have just been installed modern detention rooms for children, to replace cells in the city and county jails.

According to the Superintendent:

> "It is a good thing to have such a place for child detention, but if records keep on the way they are headed now, we won't need them in a few years. In the club are the very boys who used to keep us and the police continually on the jump. Now they're law-abiding and respectable. We shall open a girls' club to be operated like the boys' club, this winter, and I expect to see the number of complaints against young girls drop off as sharply then as complaints against boys dropped off after the activities in their club were put under way."

The improvement did not come about naturally and without tedious, painstaking work on the part of the managers of the recreation system. It took resolute purpose, confidence in human nature and great patience to achieve the results described.

"Practical Christianity, that's all it is," Mr. Koerbel explains. "Perhaps it is difficult for police and officials who have spent a lifetime in perfecting modes of tracing crime and punishing criminals to believe in its worth as against the old standards. But we have proved it here. And it can be proved with equal success in any other community in the country."

A Problem for the Cities

The Nation-Wide Campaign to Control and Eradicate Venereal Diseases Must Have the Coöperation of Every City

EDITORIAL NOTE.—*This appeal to municipal officials for increased activity and coöperation in the nation-wide campaign to stamp out the venereal diseases was prepared specially for publication in* THE AMERICAN CITY *by the United States Public Health Service. Anyone wishing more information regarding this most necessary campaign, and Chambers of Commerce desiring to aid in raising the standards of their communities, should write to The Surgeon General, U. S. Public Health Service, Washington, D. C.*

THE control and eventual eradication of venereal diseases is so essentially a problem of the cities that the United States Government, after nearly two years of active warfare against the "scarlet plague," is still using its big guns on the communities where the buildings are tall, the people ride on street cars and there are lots of white lights, with an occasional red one.

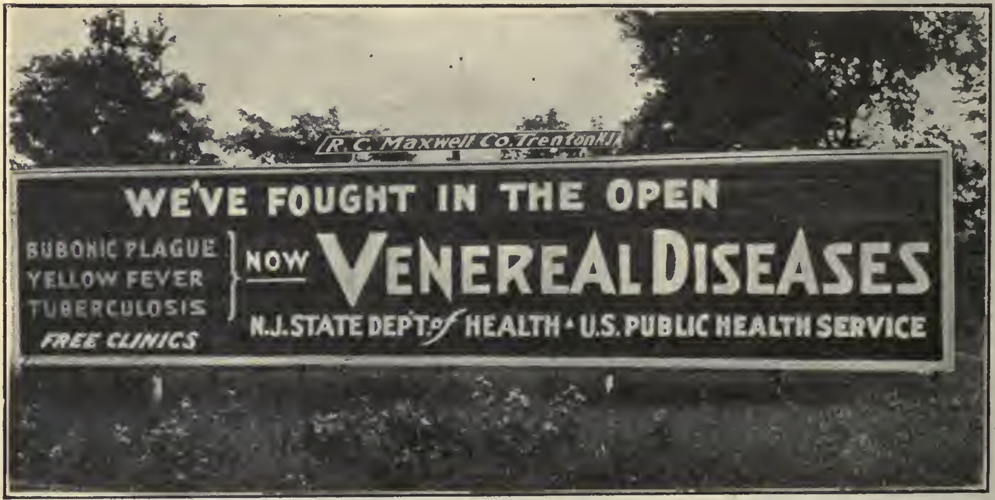
The rural communities are still practically unexplored, not because of immunity or freedom from infection, but because it has so far been impossible to muster sufficient strength to fight the menace in the city and the country at the same time.

In fact, it is only within recent months that the United States Public Health Service, in charge of the government crusade against venereal diseases, has been able to extend the campaign from a few of the larger cities to the 710 cities with a population of 10,000 and over.

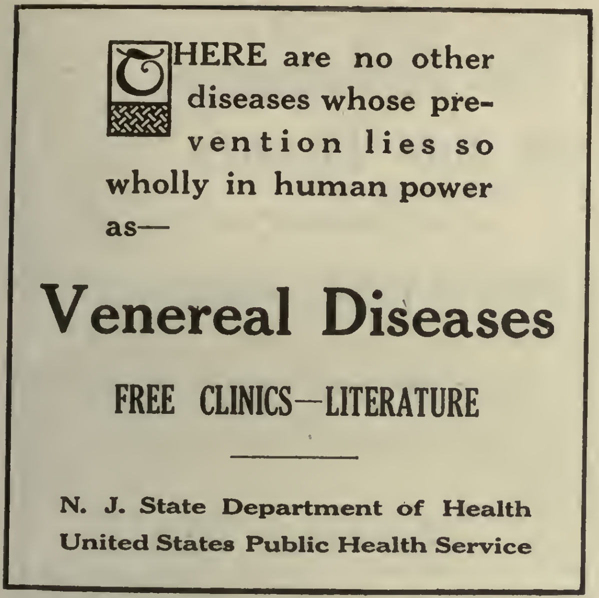
The Chamberlain-Kahn Bill

Venereal disease-control originated as a war measure. When examination of the first million draftees revealed a high prevalence of venereal infection in civilian communities, the Secretary of War and the Secretary of the Navy recommended drastic action to control the diseases for the protection of the men in the army and to promote the physical standard of the men to be drafted later. The result was the passage of the Chamberlain-Kahn bill, which provided a fund to be appropriated to the different states, to be used in combating venereal diseases in coöperation with the Public Health Service. Most unusual success has crowned the effort from the start.

In order to participate in the appropriation provided in the Chamberlain-Kahn Act, it was necessary that the states enact, or enforce measures previously enacted, designed to control venereal diseases. A number of states had such legislation, fallen



THIS IS ONE TYPE OF ADVERTISING USED BY PUBLIC HEALTH AUTHORITIES IN AIDING MUNICIPAL OFFICIALS TO FIGHT VENEREAL DISEASES



THERE are no other diseases whose prevention lies so wholly in human power as—

Venereal Diseases

FREE CLINICS—LITERATURE

N. J. State Department of Health
United States Public Health Service

TYPES OF LANTERN SLIDES FOR USE IN MOTION PICTURE THEATERS

into disuse, which had only to be revived. The others were quick to enact the necessary measures. To-day only one state, Pennsylvania, and the District of Columbia are not reaping the benefit of the federal appropriation. Both, however, are doing effective work for the control of venereal disease. Pennsylvania has made a large appropriation and is acting independently of federal assistance. The District of Columbia is operating free clinics thru its Board of Health and in coöperation with the Public Health Service. Vice regulations are being strictly enforced by the police department. So in reality the campaign is nation-wide and ever broadening.

Active Measures

State and city health officers now regard syphilis and gonorrhea as highly communicable diseases, rather than as diseases of vice, or social diseases, and are putting into effect measures as drastic as have been adopted for dealing with smallpox.

At the very top of the list of preventive measures was the closing of the red light districts. These have been universally recognized as the breeding places. They bear the same relation to venereal disease control work as does the mosquito breeding pond to malaria control. Some idea of the success of the campaign may be gained from the fact that the number of "red light districts" in the United States to-day is a bare baker's dozen. These are almost entirely in remote communities. The tenderloin of the larger cities is a thing of the past.

In connection with the closing of the tenderloin districts, clinics were established in the cities so that the sufferer with a venereal disease could get free treatment. There are about 250 of these clinics operated by the Public Health Service, or in coöperation with state boards of health. This does not take into consideration the clinics operated by hospitals, industries and charitable institutions where venereal diseases are treated along with other diseases.

For the coming year the Public Health Service has inaugurated a campaign designed to extend this clinic treatment to 710 cities with a population of 10,000 and over. As part and parcel of this campaign, the cities reached will be urged to adopt the other measures necessary; enforcement of laws forbidding prostitution, regulation of dancing hall and taxi-cabs, and a campaign of education for the general public.

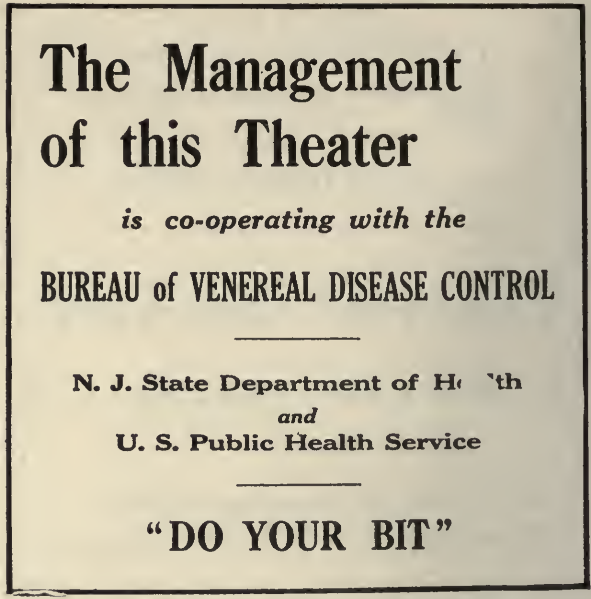
Relative Standing of Cities

In this connection it might prove interesting to compare statistics from many of the cities. In cities of 100,000 population and over, a wide range of venereal infection among the second million drafted men was shown. Cambridge, Mass., had the lowest rate, 2.03 per cent. Fort Worth, Tex., was highest, 18.67 per cent. Almost without exception the cities of the eastern, northern and western states showed a low rate of venereal infection as compared with the southern states. In other groups, taking in the smaller cities, Savannah, Ga., showed a rate of 27.45 per cent. The sectional ratios remained about the same.

The same comparisons, however, do not hold true in grading the cities of the United States according to the measures for venereal disease control. In extending the campaign to 710 cities of the United States, the Public Health Service has undertaken to grade these cities according to the effectivetiveness of the measures in operation to combat venereal diseases. A 1,000-point basis is divided into the following groups:

Medical measures, which include a free clinic	300
Educational measures	300
Law enforcement measures	300
Coöperation	100

Approximately 80 cities have already been graded, altho the campaign is just now under way. A southern city stands at the top of the list with a grade of 825. Its rate of venereal diseases among the second million draft men was 14.98 per cent. In contrast, a northern city with a rate of venereal infection of only 4.71 per cent is almost at the bottom of the graded cities of its class, with 175 points out of a possible 1,000. The southern city was in an extra-cantonment zone during the war and is taking drastic steps to maintain war-time efficiency in combating venereal diseases; the northern city is not. A western city ranks next to the southern city, with a rate of 775; its rate of venereal infection was comparatively small, 4.88 per cent, but the city officials are not content and will adopt every necessary measure to materially reduce this.



The Management of this Theater

is co-operating with the

BUREAU of VENEREAL DISEASE CONTROL

N. J. State Department of Health
and
U. S. Public Health Service

"DO YOUR BIT"

REACHING THE PUBLIC THRU THE THEATER—ONE WAY TO DRIVE THE MESSAGE HOME

Altogether, the results being reported from the many cities thruout the United States are most gratifying. Cities which did not benefit during the war by having free clinics in operation and restrictive measures enforced, for the greater part are now adopting methods similar to those employed during the war. There is even a fine spirit of competition between the city boards of health, and in making the grades there is a very gratifying amount of quibbling over points. No city wishes it broadly published that it is doing practically nothing to control venereal diseases. It hurts business.

This was never better illustrated than when the Public Health Service published a statement prepared by the office of the Surgeon General of the army showing the rate of venereal infection by cities of the second million drafted men. The cities so unfortunate as to have the highest rates immediately determined to adopt drastic restrictive measures. The cities with the low rates took advantage of the healthy condition and are now striving to improve it.

In most progressive cities the houses of prostitution, the breeding places, have been closed. Persons diseased are compelled to undergo treatment and are restricted until they are non-infectious. Those who rebel are confined. Drastic laws have been passed forbidding such diseased persons from handling food and working in dairies and restaurants. And, more drastic still, prisoners brought before the bar of justice are compelled in a great many places to submit to medical examination and are treated if diseased.

It should not be necessary to emphasize the economic side of venereal disease control. More days were lost in the army from this cause than all other diseases combined, and five-sixths of these diseases were brought into the army from civil life. It should therefore be comparatively easy to form an idea of the terrific economic loss in civil life. It is certainly important for the city to protect the public from communicable diseases more disastrous than any with which they have to deal that are not at the time epidemic.

Discounts Pay Cost of Municipal Purchasing Department in Waltham

By H. G. Saumsiegle

City Purchasing Agent, Waltham, Mass,

A DEPARTMENT of Purchases has been inaugurated by the City Manager of Waltham, Mass., in order that purchases for all departments may be centralized under one head instead of the former method of each department's buying its own requirements. It was realized that a considerable saving and a more efficient handling of purchases could be effected by such centralization. It is toward this end that we have been working for the last eighteen months (actual operation), and at the present writing the department is firmly established and working under a satisfactory system.

The first problem was the outfitting of the office and the preparing of purchase forms, the most important of which are the official requisitions, quotations, orders and invoices. The requisition was printed in duplicate; one copy for the files of the department submitting it and the yellow copy for the Purchasing Agent. The order form was printed in quadruplicate; the first copy being the original order; the second copy the "acknowledgment" of order (blue), which is signed and returned by the firm immediately upon receipt of order; the third copy (green) retained in our files for our record; the fourth copy (yellow) sent to the department for which the goods are ordered, and returned to the Purchasing Agent immediately upon receipt of goods by the department. The department then receives in exchange the third copy of the order, which was temporarily retained in our files. This makes a permanent record in our files of the acknowledgment or order, signed by the firm, and the receipt-of-goods copy, signed by the department; and also gives the vendor and the department head each a copy for record—all made at one operation originally.

System Becomes a Habit

Orders are filed numerically and indexed. Requisitions are filed numerically also, according to our requisition number (which is given each request when it is received in this office, the numbers running in rotation). These are also indexed before being filed, and the department's serial number is also recorded. The quotation form is printed in triplicate. The first and second copies are mailed to the quoting firm, with the request that the first copy be returned, signed by the firm quoting; the second copy is for the firm's files; and the third copy is a "follow-up," which is retained in our files until the quotation is received. The invoice form is printed in duplicate, and a set is sent out with each order and bears the order number. The vendor is requested to submit the bill on these forms and to take affidavit if on emergency order without a contract or quotation in our file. Our reason for this request to use our standard bill forms is that all invoices may be received on uniform bill heads and that our files, as well as the Auditor's, may be kept neat by having all sheets of one size and color.

The majority of firms have readily complied with our request; however, others have disregarded the matter and still insist on sending their own forms (one copy only) and we must make copies of the invoices for our files before they can be passed for payment. The blue duplicates of invoices are filed in this office alphabetically and then numerically behind that letter. The numerical index makes them easy of access because the invoice number is placed on the order index card, and the alphabetical guides give instantaneous access to all bills of a certain firm in a single place. A card index is kept of all materials purchased, so that by referring to this file a former price paid for a particular article may be compared with the present quotation, and so that data relating to quantities purchased at various seasons and to the market fluctuations may be ascertained.*

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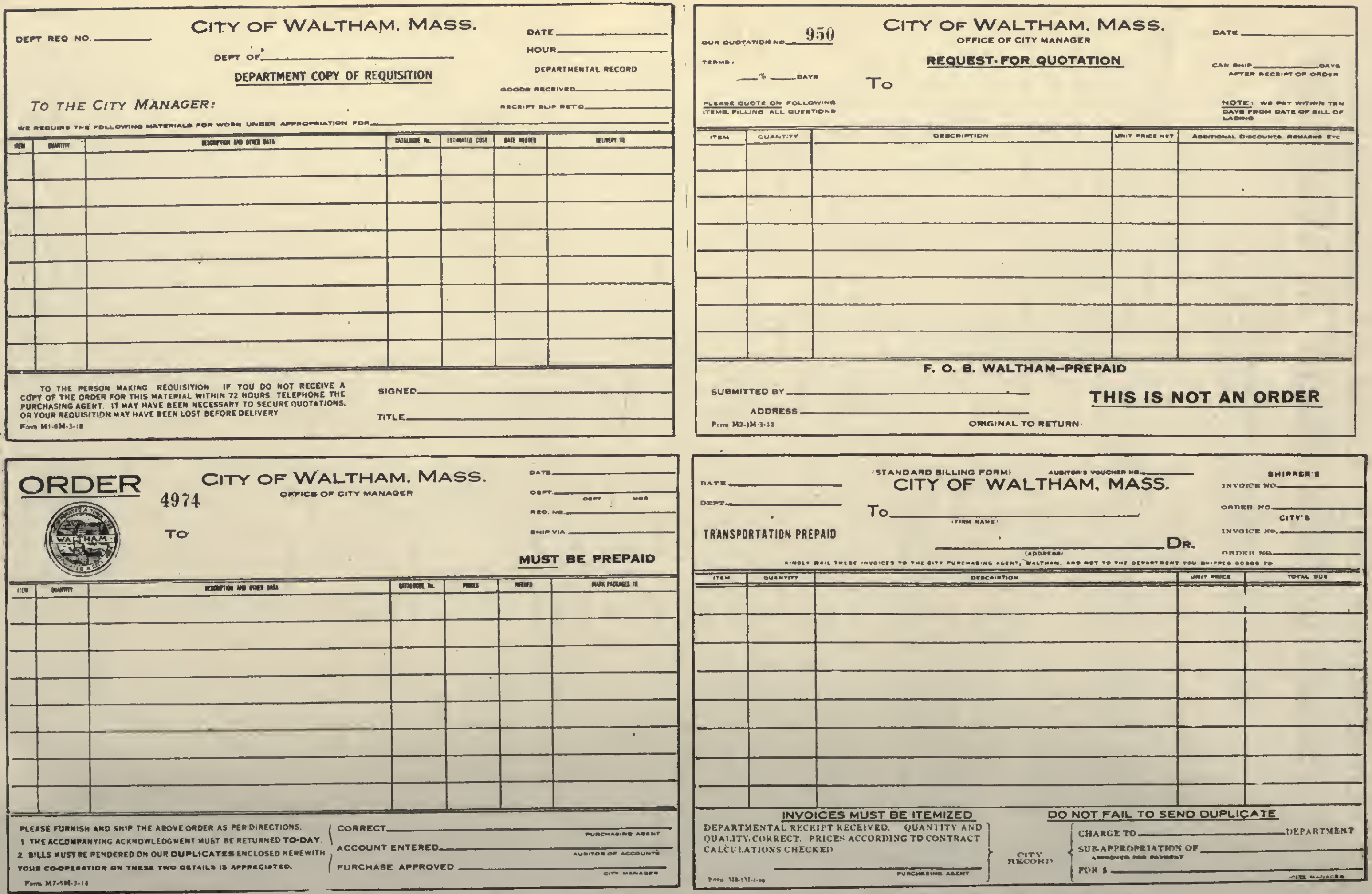
* Six other New England municipalities have now adopted this complete system, originated by our present City Manager in 1915 for Norwood, Mass.



DEPT REQ NO. ______

CITY OF WALTHAM, MASS.

DATE ______
HOUR ______

DEPT OF ______

DEPARTMENT COPY OF REQUISITION

DEPARTMENTAL RECORD
GOODS RECEIVED ______
RECEIPT SLIP RET'D ______

TO THE CITY MANAGER:

WE REQUIRE THE FOLLOWING MATERIALS FOR WORK UNDER APPROPRIATION FOR ______

ITEM	QUANTITY	DESCRIPTION AND OTHER DATA	CATALOGUE No.	ESTIMATED COST	DATE NEEDED	DELIVERY TO

TO THE PERSON MAKING REQUISITION IF YOU DO NOT RECEIVE A COPY OF THE ORDER FOR THIS MATERIAL WITHIN 72 HOURS, TELEPHONE THE PURCHASING AGENT. IT MAY HAVE BEEN NECESSARY TO SECURE QUOTATIONS, OR YOUR REQUISITION MAY HAVE BEEN LOST BEFORE DELIVERY

SIGNED ______
TITLE ______

Form M1-6M-3-18

OUR QUOTATION NO. 950

CITY OF WALTHAM, MASS.
OFFICE OF CITY MANAGER

DATE ______

TERMS:
___% ___ DAYS

REQUEST FOR QUOTATION

CAN SHIP ______ DAYS AFTER RECEIPT OF ORDER

To

PLEASE QUOTE ON FOLLOWING ITEMS, FILLING ALL QUESTIONS

NOTE: WE PAY WITHIN TEN DAYS FROM DATE OF BILL OF LADING

ITEM	QUANTITY	DESCRIPTION	UNIT PRICE NET	ADDITIONAL DISCOUNTS, REMARKS, ETC

F. O. B. WALTHAM—PREPAID

SUBMITTED BY ______
ADDRESS ______

THIS IS NOT AN ORDER

ORIGINAL TO RETURN.

Form M2-3M-3-18

ORDER

4974

CITY OF WALTHAM, MASS.
OFFICE OF CITY MANAGER

WALTHAM

DATE ______
DEPT. ______ DEPT MGR
REQ. NO. ______
SHIP VIA. ______

TO

MUST BE PREPAID

ITEM	QUANTITY	DESCRIPTION AND OTHER DATA	CATALOGUE No.	PRICES	NEEDED	MARK PACKAGES TO

PLEASE FURNISH AND SHIP THE ABOVE ORDER AS PER DIRECTIONS.
1 THE ACCOMPANYING ACKNOWLEDGMENT MUST BE RETURNED TO-DAY.
2 BILLS MUST BE RENDERED ON OUR DUPLICATES ENCLOSED HEREWITH
YOUR CO-OPERATION ON THESE TWO DETAILS IS APPRECIATED.

CORRECT ______ PURCHASING AGENT
ACCOUNT ENTERED ______ AUDITOR OF ACCOUNTS
PURCHASE APPROVED ______ CITY MANAGER

Form M7-5M-3-18

(STANDARD BILLING FORM) AUDITOR'S VOUCHER NO. ______

DATE ______
DEPT. ______

CITY OF WALTHAM, MASS.

SHIPPER'S
INVOICE NO. ______
ORDER NO. ______
CITY'S
INVOICE NO. ______
ORDER NO. ______

To ______ (FIRM NAME)

TRANSPORTATION PREPAID

______ (ADDRESS) Dr.

KINDLY MAIL THESE INVOICES TO THE CITY PURCHASING AGENT, WALTHAM, AND NOT TO THE DEPARTMENT YOU SHIPPED GOODS TO

ITEM	QUANTITY	DESCRIPTION	UNIT PRICE	TOTAL DUE

INVOICES MUST BE ITEMIZED

DEPARTMENTAL RECEIPT RECEIVED. QUANTITY AND QUALITY CORRECT. PRICES ACCORDING TO CONTRACT CALCULATIONS CHECKED

______ PURCHASING AGENT

CITY RECORD

DO NOT FAIL TO SEND DUPLICATE

CHARGE TO ______ DEPARTMENT
SUB-APPROPRIATION OF ______
APPROVED FOR PAYMENT
FOR $ ______ CITY MANAGER

Form M8-[illegible]

FOUR OF THE FORMS USED BY THE MUNICIPAL PURCHASING DEPARTMENT, WALTHAM, MASS.

Prompt Payments Attract Low Prices

As to payment of invoices, formerly each department approved and passed bills to the Auditor only once a month, and very few, if any, discounts could be taken for cash payments, because the discount period had already passed or would have passed before the Auditor could prepare his warrants to the Treasurer for payment, this partly because of numerous "committee" and "aldermanic" approvals. All invoices, except those of the School Department and emergency food bills and rents of the Welfare Department, are now submitted to the office of the Purchasing Department for checking and investigating for the Manager's approval. On the 7th, 17th, and 27th of each month all invoices which are ready for payment are forwarded to the Auditor after all possible discounts have been deducted. By this method we have been able to save nearly $900 during the last eleven months on 2 per cent cash, for 10-day payment. This system removes the former burden placed on the Auditor at the end of each month, by distributing the work thruout the month, and encourages better prices from vendors because of prompt payments.

Eliminating Delays

The "follow-up" system on orders issued has been used with great success in spite of war conditions delaying shipments, etc. A small metal tab with the number of the day of the month is attached to each order ten days after the date upon which the order was sent. Upon referring to the file each morning, all orders bearing the current date are removed from the file, and a printed post card in the form of an inquiry is sent to each firm, requesting information on delay of shipment of goods, etc.

Stores Account

A Stores Account, covering stationery supplies, office supplies, etc., has worked out successfully. For instance, instead of buying a few dozen pencils for some office, a gross or two are purchased for the Purchasing Agent, Stores Account, and the smaller requirement is then charged to the other department. With the size of stock which we require, no large saving can, of course, be realized, but many small orders can be avoided and the rather slip-shod method of "Go out to So-and-So and get it" is not so conveniently practiced. It is our intention this year to extend the Stores system to include supplies for public buildings and any other general supplies which can be purchased advantageously in quantities.

The Great Saving Thru Discounts

The total number of written requests for requisitions was 1,335, but hundreds of telephone requests were also received. It has been our aim to have all materials ordered thru this office and covered by our forms. We have impressed this on all departments, and in case of emergencies have requested that they call us on the telephone before ordering materials for such emergencies. We usually have sufficient time to secure prices and turn the department to the firm giving the most favorable quotation. The majority of quotations are received over the telephone, because it is the quickest and usually the most satisfactory method. However, it has been necessary to send out a number of requests for written quotations.

Materials have been purchased locally just as far as possible, and it will be noted that over one-half the purchase orders were issued to local firms. Much miscellaneous material (such as hardware, lumber, coal, etc.) has been received locally but has not been covered by orders and, therefore, does not appear on the chart. It must, therefore, be realized that the item of $36,487.30 does not include all the business given to local firms by departments buying thru the Purchasing Agent, while, on the other hand, the $106,238.22 does represent practically the whole amount of business with foreign firms. The total cost of running the department has been $1,870, of which $577 was for initial furnishings, and the actual operation has been more than offset by the total savings effected by trade and cash discounts of $1,715.

Without attempting to estimate the amount saved to the city on the total of its annual purchase, it is worth knowing that discounts alone have practically offset the entire cost of the office, including the new equipment and salaries. This does not take into account the advantages made possible by the coöperation of the city departments in pooling purchases and the saving realized thru competitive bidding.

The Results of a Park Board's Foresight

By Will O. Doolittle

Superintendent of Parks, Minot, N. Dak.

THE park system of the city of Minot, N. Dak., has been only six years in the making, but the practical results achieved speak well for the foresight and efficiency of its Board of Park Commissioners, especially of those members who, from the first, have had a clear vision of the needs of the people and a determination to provide every possible facility for their comfort, pleasure and recreation.

The slogan has been "an acre of parks for every hundred people"—not merely so much ground purchased and set aside in neglect, but ample room for everyone, where may be found the playgrounds and athletic fields, the picnic grounds, the beautiful landscapes, the educational features, the bathing and boating, the natural woods and beautiful drives, the tourists' camps and other features of a modern and competently maintained park system. This vision has become a reality; for Minot, altho a city of less than 15,000 people, is well in the lead in the state on account of the size and beauty of the park system and the service which it renders.

The Park Commissioners are working in harmony with the Association of Commerce and such organizations as the Rotary Club, Town Criers, Women's Clubs and City Beautifying League, in the preparation of a comprehensive city planning project. The parks are already well established and equipped and will continue to grow in size and features. There is need, however, for better street and housing conditions, boulevards and roads, public building planning, improved river conditions, and many other things that will work for the beautifying of the city. The Park Board is taking up this general plan with the same far-seeing vision it had in the park building.

Minot's largest park contains 66 acres. There are several smaller parks ranging up to fifteen acres. In Riverside Park (the largest) are most of the features to be found in a large city park. It has baseball and football fields, tennis courts, skating ponds, picnic groves, beautiful lawns and shrubbery, good auto roads following the banks of the Mouse River, band and rest

THE BEARS' DEN, MINOT, N. DAK., SHOWING THE PROTECTING MOAT WHICH DOES AWAY WITH BARS AND WIRES pavilions, a tourists' camp, and one of the best zoölogical exhibitions in the Northwest, exclusive of the coast cities.

Steps are being taken to make the tourists' camp of the greatest service to the traveling public. The proposed coast-to-coast highway—the Roosevelt Memorial Highway—passes thru Minot and is at present known both as the Wonderland and the Glacier Park Highway. Provision has been made for a direct route into Minot, passing by Riverside Park. Here, if the traveler desires to stop, can be found many of the conveniences of home with the added enchantment of camp life. Next season the tourists' camp will be located in a delightful grove in the park; fuel, water, good fireplaces and free attendance will be furnished, and all the park attractions will be close at hand.

Probably the greatest of these attractions is the Minot park's zoo of North American animals and birds. The zoo was begun four years ago, and the plan for moderate increase and the maintenance of healthful conditions is bearing fruit in an educational exhibition that is a credit to the city and a source of pleasurable surprise to visitors. We are looking to the future, and our plan is for a habitat zoo where the occupants excite admiration instead of pity because of close, unsanitary confinement; where visitors may learn to know the habits of the animals and birds in their wild state; where condition and upkeep are accented instead of numbers. We believe the city too small to attempt to have represented species of many foreign animals and birds, but we are strong in the belief that, under our conditions and with our opportunities, it is a duty to give a fair representation of American fauna, as an educational and pleasure-giving exhibition.

Aside from smaller rustic enclosures, our first attempt at the habitat plan was in the construction this season of the "open-face" bear dens. These dens are constructed of our native boulders and concrete. The yards are ample for playgrounds for a large number of bears. No iron bars obstruct the view of the public, but encroachment by the bears is prevented by a moat, 60 feet long and 15 feet wide. In this moat the bears can bathe and swim. On the public side there is a depth of 5 feet of water and a 4-foot sheer rise of wall above the waterline. This is sufficient to confine the bears in safety. Since being placed in the yards the animals are healthier, happier and furnish much more amusement and pleasure to the people. The habitat idea is further carried out by an artificial waterfall, emptying thru a series of small pools and stream into the moat. The exterior or "rear" of dens is viewed from the more formal part of the park and not from the zoo grounds, and represents an ancient stone castle.

What has been done for the bears we hope to do, in time, for all other occupants of the zoo—to approach as nearly as possible the natural conditions and freedom. The raccoons should have their trees; the game birds their thickets and hiding places; the hoofed animals their groves, grazing and wading places; the birds of prey their freedom of wing; the members of the dog, cat and mink families their rocky dens, trees and running water; the otter, beaver and wild fowl their ponds and pools. The confinement of the zoo occupants should never intrude itself upon the visitor.

Situated as it will be upon the great Roosevelt Highway, and offering as it does so many of the features that were dear to the heart of the great American, the park and zoölogical gardens will be dedicated in the near future to his memory, renamed the "Roosevelt Park and Zoological Gardens," and will contain suitable memorials of permanent character.

Not only for our own people but for the visitor from without our state, the park management hopes to provide pleasure, recreation and service.

In the list of 1919-1920 lectures announced for Sunday afternoons at 4 o'clock at the Metropolitan Museum of Art, New York, the following are of especial interest to the readers of The American City: on December 21, "War Memorials," by Charles Moore, of the National Commission of Fine Arts; and on February 29, "The Architectural Growth of New York," by Richard F. Bach, Associate in Industrial Arts, of the Metropolitan Museum.

Has Your Zoo a Buffalo?

Agricultural Bill Passed by Congress Provides for Disposal of Surplus to Cities and Public Institutions

PROVISION is made in the current agricultural appropriation act for the Secretary of Agriculture to give buffalo to municipalities and public institutions from any surplus which may exist in the herds now under the control of the Department of Agriculture. In order to aid in the propagation of the species, the bill provides that animals may be lent to or exchanged with other owners of American bison. No provision is made to give them to individuals, and only one may be given to each municipality or public institution. This provision is made because of the surplus of bulls in some of the Department of Agriculture's buffalo herds, particularly the one in the Wichita National Forest and Game Preserve, in Oklahoma, and because the department is nearing the realization of the first stage in the preservation of the species—the acquisition of at least 1,000 head of buffalo by the Government. The number to be distributed will be small.

There are approximately 7,000 buffalo in North America. Canada has something over 3,500, and the total number in the United States is more than 3,000. This is about seven times the number in the United States in 1889, when the first buffalo census was taken. There are eight Government herds, six of which are under the control of the Department of Agriculture. The largest herd in this country is in charge of the Interior Department and is located in the Yellowstone National Park, where there are about 450 bison. The Smithsonian Institution now has a herd of 18 at the National Zoological Park, Washington, D. C.

Two herds have been established in the past year, one in Sullys Hill Park, North Dakota, the other in the Pisgah National Game Preserve, North Carolina. The other herds supervised by the Department of Agriculture are located in the Montana National Bison Range; the Niobrara Reservation, Nebraska; and the Wind Cave Game Preserve, South Dakota. The plan of the department is to establish at least ten herds, widely distributed, in order to prevent the spread of any contagious disease, should it become uncontrollable in any of the herds.

"BLACK DOG," OF THE WICHITA HERD, THE LARGEST BUFFALO IN THE WORLD

A visitor to a city should be well impressed by its parks. Why not make them interesting to all who inspect them?

The Rural Viewpoint in State Constitutions a Bar to Municipal Progress

By A. G. Ewing, Jr.

City Attorney of Nashville, Tenn.

POPULATION has become so congested in our cities that the problem of municipal government has been rendered more complex than the government of the states and possibly of the nation itself. Before the automobile and the railroad we were a rural people. The constitution of the United States and the constitutions of the older states were written by men who knew nothing of city life and its complex social and governmental conditions. The city is recognized but scantily in the constitutions of the nation and of the state. This has led to much confusion in municipal law.

The development of modern life has resulted in a great increase in the demands upon municipal finances and for the equitable levying and distribution of taxes. The Supreme Court of Tennessee up to 1907 rejected the doctrine of assessment for local benefits, but the needs of municipal life were so great that the courts of this state fell into line with the trend of the country. The time has arrived when municipalities will be compelled to abandon the old theory of municipal support from taxes alone, levied thruout the entire corporate limits upon all the property therein.

It has become well recognized that it is unjust to assess for sewer improvements property that does not drain thru such improvements or is served by another sewerage system. It has also been recognized that it is equally unjust to pay out of general taxes for permanent hard-surface streets which cost hundreds of thousands of dollars when hundreds of miles of streets in other sections of the city are in a wretchedly paved condition because the property in these districts is called on for general taxes to make improvements elsewhere. It is equally unjust that long, shady avenues with wide parked borders with flowers, trees and fountains should be constructed out of general taxes. The time has come when these inequalities must be leveled. Improvements made from public funds should be paid for out of the funds derived from the property benefited. It must be kept in mind, however, that the general public all receive part of the benefits and should pay an equitable proportion of both the original cost and the upkeep.

There should be two systems of assessment for the maintenance of municipalities—local benefit improvements and general municipal operation. In the first classification fall more or less clearly the following: trunk and lateral sewers, water-works, streets, parkways, shade trees, neighborhood playgrounds, school districts, domestic and sanitary cleaning, street sprinkling and street maintenance, possibly fire equipment and street lighting. In the second class fall the official and clerical salaries, the equipment of standard machinery for street construction, the initial cost of the pumping station exclusive of the mains, the initial cost of the lighting plant exclusive of the circuits, police headquarters, the city hall, the main markethouse, the central building and organization equipment and all houses of correction and detention. All general benefits, such as high schools, where the service is rendered to the entire community, should be supported by general taxes.

I find that there is a drift thruout the cities of the nation toward this general theory of municipal support. The serious difficulty that the modern municipal official has is to keep taxation within such limits and improvements up to such standards of efficiency as to increase municipal growth.

Constitutions should be so amended as to preserve sufficient opportunity for legislation that is general in its nature, and to prevent the local affairs of cities from being made pawns in the hands of local or state politicians. There should be no unwarranted interference by irresponsible persons with the officers of the municipality, who are well acquainted with the needs and the possibilities of financing a city.

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* From a paper read at a meeting of the Municipal League of Tennessee.

Teaching Health in the Schools

Live Methods Will Arouse Pupils to Action and Produce Results

By Dr. L. Emmett Holt
Professor of Children's Diseases, Columbia University

THE greatest mistake made in public health teaching in the past has been that the instruction has been directed almost entirely to the adults of the community. But adults are proverbially poor pupils in any school. It is hard for them to unlearn what they were taught in childhood, whether in this country or abroad, and any modern health instruction given to them must be given by removing many of the bad health habits which they have practiced all their lives. It is becoming increasingly evident that we have begun too late with our health instruction. The child is the fittest subject in which to instill proper health knowledge. He has no prejudice to overcome; his mind is virgin soil to receive any seed of truth in health or other matters; he delights in the knowledge of the simple things which relate to his daily experience.

The Great Opportunity of the School

It is particularly in the schools that the opportunities for teaching health are the greatest, and this opportunity is as yet scarcely recognized. The long period of school life perrmits a great variety of health teaching, from the simplest things taught the youngest, with graded instruction for those who are older, to the wider knowledge which can be given the oldest. Much more can be done in school than even in the most enlightened homes. In fact, the home itself is often best reached thru the child.

It is easy, if the right methods are employed, to interest the child in health matters, and it is not very difficult to influence him in the formation of good habits. The twig is so easily bent. In most matters havits are not yet formed, and it is just as easy to form good habits as to form bad ones. All these things combine to make childhood the golden period of life in which to teach health.

What to Teach

Exactly what do we include under health teaching, and how much health can be taught to children? There are clearly two distinct kinds of health instruction. One relates to matters of public or social health and is largely concerned with the prevention of diseases which may be spread thru the community. The relation of these scourges to faulty hygiene and sanitation, the fact that they may be spread by unhealthy persons who handle food, or thru milk or water-supply. or by mosquitoes, flies, rats, lice or other vermin, and that many of these diseases can be communicated from one person to another—all these things can easily be understood by older children. They then come to recognize the importance of sanitary laws for a city, and will generally be found to be the most conscientious observers of these laws. They can easily appreciate what it means to have their milk and water-supply closely watched by experts, the value of clean streets, the necessity for proper disposal of sewage, garbage, etc. They can understand also why quarantine is necessary in communicable diseases, and they easily accept this curtailment of individual liberty for the sake of the rest of the community.

The results of the compaigns against tuberculosis, malaria, typhoid, yellow fever and smallpox should be familiar to all, and there is no reason why much of this should not be given in the schools. These stories, when properly presented by one who knows how to write for children, can be made quite as interesting as the campaigns of Napoleon or Alexander, and their study vastly more profitable.

The economic value of health is something even a child can appreciate; what it has meant to the prosperity of some parts of the world to get rid of malaria; how this made possible the building of the Panama Canal; what it meant during the war to keep soldiers fit for duty when serving in a malarial country. Castellani, an Italian physician who was stationed at Salonika. tells us that in the Greek army, which took no precautions, 100 per cent of officers and men were attacked with malaria, while in another army in the same place which took the trouble to drain the camp, to cover stagnant pools with oil and to protect its men against the mosquito and to give them quinine, only 3 per cent of the officers and 6 per cent of the men were attacked.

Much good health literature for children has appeared in the last few years, but it has not yet found its proper place in the schools. If only we can get the children in our schools interested in these great public health problems, it is not going to be difficult to secure adequate health legislation or public support for the enforcement of any advanced health measures which may in the future become necessary. The older children in our schools will very soon form our voting population, and their education along the lines suggested cannot be too seriously taken, if we are to have a public intelligent in these health matters.

The other phase of health instruction is that which might, in contrast with the foregoing, be termed private or personal health. It is to be carried on along quite different lines from those employed in instruction in public health. It should be begun with little children of eight or nine. Here the chief purpose should be to stimulate the formation of good health habits; the aim, to rouse to action, not simply to impart information. For this end only such knowledge of the functions and needs of the body is required as to make the child understand what is necessary for its protection and care, or enough to form the basis of good health habits. The child can easily learn the essential needs of his body—proper food, cleanliness, fresh air, exercise, rest, etc.; also the things that do harm—improper food, decayed teeth, excess in eating or drinking, lack of proper sleep, the use of tea or coffee, alcohol, drugs, and, finally, how the body may in some measure be protected against infection.

Methods of Arousing Interest

Nothing is accomplished by lecturing to children. Our purpose is not to teach children rules, but to make them form habits. We must carry our point by indirection. We can no more make children healthy by telling them that is what we are setting out to do, than we can improve the morals of a community by announcing that we have come into their neighborhood to do them good. It is self-evident that before children can be influenced they must be interested, and to arouse the interest of children in health matters is one of the objects for which the Child Health Organization was formed and for which it is conducting a national campaign.

Children love to wear badges, to belong to a club; and the organization in schools of "health leagues" and "modern health crusades," in which children are banded together to observe such rules as we have indicated, has aroused much interest in many parts of the United States.

Group competition based upon weight and height has been found to be one of the most valuable means of stimulating interest in health. Scales should be in every school, so that every child is weighed and measured at the beginning of the school year and weighed monthly thereafter. Weights are entered on a large record sheet in the schoolroom by the child himself. One who is far below weight or who fails to make the normal gain per month is losing in the health game. If losing, he is not following the rules. Which one is he breaking? The one relating to food, to hours of sleep, tea and coffee or what? Now is the occasion to stress the health rules. As these records of health progress go home to the mother, her interest is soon awakened, and coöperation can, with a little difficulty, be secured. It is astonishing how much influence the idea of competition in health has upon a child's mind. Other useful measures are health pictures and posters—they must be good ones, however; some the children can make themselves, which gives an added interest.

Mrs. Frederick Peterson, of New York, has written some health rhymes which appeal strongly to many children, especially when accompanied by appropriate pictures. For example:

"There was a boy in our town whose mother
was not wise.
Coffee and tea he used to get, and grew up
under-size;
But when he failed the football team because
his size was small,
He cut out both and took to milk and grew up
very tall!"

The teaching of health as we have considered it is something quite different from the teaching of physiology or physical education, tho it should be closely tied up with both of them. All of us as children probably studied physiology in school, but how much did it modify our health habits during school life or afterwards? It was not connected with practical life and has influenced our health habits no more than the study of botany; as an aid in improving or maintaining health, it might as well have been omitted altogether. The same may be said of much of the instruction in physical education that is given at the present time. It is not brought into close vital connection with the child's life, as it might be, and consequently a large part of the value of instruction in the subject is lost. In a similar way schools not infrequently offer attractive school lunches, but entirely miss the educational opportunity which the lunch affords for teaching such important practical lessons as food values and food costs.

Let us, then, endeavor to concentrate upon the health teaching in the schools; teach health in all schools as universally as reading and writing; see to it that time is given each day for some health lesson; that the teachers themselves are prepared to teach health, and that they understand and appreciate not only the importance and the value of health, but the great opportunity which the school offers to influence the children to form good health habits.

Of course such teaching as I have suggested is only part of the problem. This work must be supplemented by the work of school physicians and nurses, by whom defects which interfere with proper growth and development are recognized and removed. We cannot too strongly emphasize the value of and the necessity for proper medical school inspection; but it must be thoro and regular. One complete medical examination a year for each child should be the minimum. A medical examination which is concerned chiefly or solely with such defects as tonsils, adenoids, teeth, etc., and ignores the condition of the child's nutrition and his rate of growth, has failed, I believe, in its main purpose.

Health teaching in the schools such as has been suggested in this paper, especially when accompanied by records of weight and height, furnishes a fundamental basis for medical examinations, the meaning of which even the pupils can now appreciate. Health teaching is, therefore, the very first step in the solution of the health problem of the school child.

On the Calendar of Conventions

December 26-30.—Cleveland, Ohio
National Municipal League. Annual convention. Secretary, Clinton Rogers Woodruff, North American Building, Philadelphia, Pa.

December 29-31.—Chicago, Ill.
American Economic Association. Annual meeting. Secretary, Allyn A. Young, Cornell University, Ithaca, N. Y.

December 29-31.—Cleveland, Ohio
American Political Science Association. Annual meeting. Secretary, Chester Lloyd Jones, University of Wisconsin, Madison, Wis.

December 29-31.—Cleveland, Ohio
Governmental Research Conference. Annual meeting. Secretary, Lent D. Upson, 100 Griswold Street, Detroit, Mich.

December 29-31.—Cleveland, Ohio
National Association of Civic Secretaries. Annual meeting. Secretary, Gustavus Tuckerman, City Club, St. Louis, Mo.

January 13.—New York City
American Forestry Association. Annual meeting. Executive Secretary, P. S. Ridsdale, 1410 H Street, N. W., Washington, D. C.

January 14.—Boston, Mass.
New England Water Works Association. Annual meeting. Secretary, Willard Kent, Narragansett Pier, R. I.

January 15-16.—Asheville, N. C.
Southern Appalachian Good Roads Association. Annual meeting. President, A. D. Williams, Parkersburg, W. Va.

January 16-17.—Kansas City, Mo.
Western Paving Brick Manufacturers' Association. Annual meeting. Secretary, G. W. Thurston, 416 Dwight Building, Kansas City, Mo.

January 19.—New York City.
American Institute of Consulting Engineers. Annual meeting. Secretary, F. A. Molitor, 35 Nassau Street, New York City.

January 21-22.—New York City
American Society of Civil Engineers. Annual meeting. Secretary, Charles Warren Hunt, 33 West Thirty-ninth Street, New York City.

January 27-29.—New York City
American Society of Heating and Ventilating Engineers. Annual meeting. Secretary, Casin W. Obert, 29 West Thirty-ninth Street, New York City.

January 28.—Chicago, Ill.
Western Society of Engineers. Annual meeting. Secretary, Edgar S. Nethercut, 1735 Monadnock Block, Chicago, Ill.

February 9-13.—Louisville, Ky.
American Road Builders' Association. Annaul convention. Secretary, E. L. Powers, 150 Nassau Street, New York City.

February 16-18.—London, Eng.
International Garden Cities and Town Planning Association. Annual meeting. Hon. Secretary, C. B. Purdon, 3 Grays Inn Place, London, W. C., Eng.

February 19-21.—Chicago, Ill.
National Society for Vocational Education. Annual convention. President, David Snedden, Teachers College, New York City.

February 20-21.—Chicago, Ill.
American Concrete Pipe Association. Annual convention. Secretary, G. E. Warren, 210 South LaSalle Street, Chicago, Ill.

FORWARD STEPS
REPORTED TO THE AMERICAN CITY
BY MUNICIPAL OFFICIALS & DEPARTMENT HEADS

For this department the editors will welcome short articles from city, town and county officials and heads of departments, on subjects of interest and practical value to others engaged in similar work. Photographs, plans, or other illustrative material, should accompany the articles whenever available.

MAYORS

Municipal Fuel Plant Proves Valuable

EAU CLAIRE, WIS.—The municipal fuel plant of the city of Eau Claire has been in operation for the last two years and has proved its value to the city. It was provided for by a bond issue which received popular endorsement. Prior to the building of the coal sheds, which are of the latest type, and the installation of scales and other up-to-date equipment, coal was unloaded directly from the cars, thus eliminating an extra item of cost in the price of such fuel to the consumer. This method, while it had some advantages, had also obvious disadvantages in the limitation of the amount of coal that could be kept on hand, a limitation which is removed by the present arrangement. Up to this time the city has not handled wood, but it is possible that this may be undertaken during the coming winter. At present only standard grades of anthracite and bituminous coal are handled. The volume of business has increased constantly since the establishment of the municipal plant. The management of the plant has been delegated to a member of the Commission, but it is anticipated that it may be necessary later, with the increase in business, to appoint a manager.

During the coal shortage of two winters ago the municipal plant gave relief in numberless cases where local fuel dealers could not supply the demand. The plant is favorably located for traffic, and its successful operation, the gross tonnage of coal handled, the volume of business done and the net profit for the winters of 1917-18 and 1918-19 were as follows:

1917-18, 1,500 tons; profit, $700.
1918-19, 1,600 tons; profit, $770.

JOHN E. BARRON,
Mayor.

MUNICIPAL COAL SHEDS, EAU CLAIRE, WIS.

CITY MANAGERS

Greater Departmental Efficiency Under City Manager Plan

Elizabeth City, N. C.—Since July 1, 1919, when the present city manager of Elizabeth City took office, numerous forward steps have been taken, some of which are worth noting.

The pay of the police has been raised 33⅓ per cent, and the men now have to furnish regulation uniforms modeled after our own specifications. Standard firearms have been purchased by the city for the use of police officers. An officer is kept on duty at police headquarters all night to handle telephone calls. This may sound odd to the officials of large cities, but in a small community it marks the beginning of twenty-four-hour police service and means that the police chief will not be called at his home at all hours of the night.

Rooms have just been completed for the drivers of motor fire trucks adjacent to their apparatus—a much needed improvement which makes possible prompt response to alarms. We have also recently installed an electric siren to replace the old court house bell as a means of sounding alarms.

A new general sanitary ordinance is being compiled providing for strict supervision of the production and sale of milk. The day of the one-cow stable is nearly over. Sanitary features of the new ordinance will force many of the old unsanitary stables out of business and make possible a reduction in the infant mortality rate. The new privy law of the state which went into effect October 1 is already yielding results in the number of applications for connections with the city sewer system which was authorized by a recent ordinance compelling all buildings on sewer lines to connect. This will also permit the closing of the drainage canals and the proper surfacing of the streets along which they formerly ran.

All the twenty-four stalls of the market house are now rented from September 1, yielding an annual income to the city of $9,012; twelve of the stalls are equipped with large Ottenheimer refrigerator meat boxes, kept cold by the ammonia system operated by our own machines. Good-quality ice boxes have been provided for the fish stalls. Each is sufficient in size to ice three barrels of fish. The lighting system has been improved, a concrete walk laid on two sides of the building and a wooden walk constructed on the third side for the use of the fish dealers. Plans have also been prepared for the paving of the streets near the market house, so that space can be rented to hucksters.

The Street Department now does all the street repair and general maintenance work. Pending the construction of the sewerage system, drainage canals and ditches have been cleaned, and property owners are required to cut weeds on vacant lots. One man is kept on duty at the department stable and is made responsible for the feeding of the horses, thereby saving considerable feed that was wasted when each man fed his own horse. Feed is now purchased on monthly sealed bids from local dealers, with resulting economy.

The Sanitary Department has been enlarged and now takes care of all night soil, garbage and swill, trash and street cleaning. Garbage and swill are collected over the entire city daily by automobile and disposed of by feeding to hogs. To take advantage of this daily collection, householders must have the refuse in covered receptacles on or near the sidewalk line.

Elizabeth City has not taken any very long forward steps as yet, but is learning how to walk straight and steadily.

F. W. SIMONDS,
City Manager.

FIRE DEPARTMENTS

New Giant Pumper Installed in Louisville

Louisville, Ky.—When the Fire Department of Louisville, Ky., acquired its first centrifugal pumping engine in July the machine was given a thoro test before being accepted by the city, in order that the city might feel certain that the engine would stand thru any emergency.

The new Ahrens-Fox combination pumping engine and hose carrier has a capacity of 1,400 gallons per minute, and has one

THE MOTOR PUMPER RECENTLY TESTED IN LOUISVILLE, KY.

special feature to cover conditions peculiar to Louisville, namely, a suction arrangement for readily taking water from either cisterns or hydrants. For pumping from cisterns, of which there are many in the district which is covered by this engine, two 4½-inch suctions with strainers attached are carried, always connected to two swivel elbows with integral gate valves. For ordinary work one suction is used. Should the full capacity of the engine be required, the second suction is dropped into the cistern and the second gate valve opened. There is a third inlet to the pump for use in taking water from a hydrant. When this 6-inch soft suction is used, the gate valves to the other suctions are closed. This arrangement makes it equally convenient to take water either from cisterns or from hydrants without the loss of time caused by connecting suctions and changing from hydrant to strainer connection.

TWELVE ¾-INCH STREAMS BEING THROWN AT ONE TIME BY LOUISVILLE'S NEW MOTOR PUMPER

The weight of the engine, fully equipped, with deluge set, nozzles, six special hose adapters, door opener, axes, all necessary wrenches, 600 feet of 2½-inch and 500 feet of 3-inch hose, and six men, is 16,545 pounds. This engine, which is intended for heavy duty in the high-value and congested district in the city, can do the work of three ordinary steamers. It can supply the water tower with its two 1¾-inch nozzles, two 1¾-inch deluge sets, and can easily handle four 1¼-inch streams or twelve ¾-inch streams. It has taken the place of a double extra first-size Metropolitan steamer and a large combination chemical engine and hose wagon and five horses, with a difference in cost of up-keep of about $98 per month.

In a recent test, in the presence of the Mayor and the Board of Safety, at the Inter-Southern Building, which is twenty-two stories in height, it sent a 2-inch stream to the top of the building, then a 1¾-inch stream 11 feet over the top of the cornice.

Two 2½-inch lines of 150 feet each were then attached to the stand-pipe on the building, and a 150-foot line of 2½-inch hose from the top of the stand-pipe was carried to the roof. With a 1¼-inch nozzle a stream was sent to the roof of the Court House 250 feet away. A nozzle pressure of 105 pounds was easily maintained. This is a particularly valuable fire-fighting machine and far surpasses the old horse-drawn engine—in fact, it makes a very powerful portable high-pressure pumping station.

ARNOLD NEUENSCHWANDER,
Chief, Fire Department.

CITY CLERKS

Getting Citizens to Read Financial Statements

Winfield, Kans.—It is one thing to issue an annual financial report of a city and another to have it read by the average citizen.

With the hope of stimulating interest, the writer inclosed a mimeographed copy of the following letter in each report sent out.

Winfield, Kans., August 15, 1919.

Mr. Taxpayer:

Do you know what it costs to run the city? Do you have any idea of where and how $7.57½ of every $19.27½ of general taxes which you paid to the County Treasurer last December was spent?

Just for a little diversion, now while everything is dull, including the weather, and most of us would rather be out on the river fishing or swimming than keeping shop, let's take a few minutes to discuss city affairs.

As stated in the beginning, $7.57½ out of every $19.27½ general taxes paid by you last December went toward the upkeep of the city, $7.50 for school purposes, and the remaining $4.20 to the county and state.

What amount do you think the city received from that levy of $7.57½? It was $83,944.85, but it cost $130,035.57, for we paid out $7,885 for a new fire truck, something over $11,000 on sewer line repairs and improvements, and retired $7,000 of our general bond debt—that is, bonds charged to the city in general. Of course, the city in general is liable for the payment of all bonds, but the property owners in the benefit district are charged for the special improvement bond payments (schedule listed on page 11 of this report), while the payments on the electric light and water-works bonds are from plant earnings.

Mr. Taxpayer, were you ever close run for ready money with an obligation falling due—a note that you could not postpone or renew? The city of Winfield was confronted with that same problem the 1st of January, 1918, when we had $25,000 in refunding bonds due that had to be paid, and they were paid.

While we are talking about the city bonded debt, do you know that we are in better shape along that line than any town I know of in the state of the same size? Our general bonded indebtedness has been reduced $38,000 since 1915. It is true that our water-works bonds have been increased $125,000, but you know we have about the best water in the state now.

Let me assure you that your city officials are not overlooking an opportunity to save the city money. In October, 1918, when we were seeking a market for $125,000 4½ per cent water-works improvement bonds, the bond houses and bond buyers all said we would have to raise the rate to 5 per cent or we never could float the bonds. Those bonds are on the market and bearing interest at the rate of 4½ per cent, a saving of $625 a year in interest.

Our electric plant has always been financially successful, the net earnings for the past year being $19,235.74. While the water plant has been a financial burden in the past, the writer believes it is now on a paying basis.

When you have read this annual statement, the object of this letter will have been accomplished.

Within three days from the date of mailing the report responses were received from 60 per cent of the persons to whom the report was sent.

W. C. HAIL,
City Clerk.

City Builds Gutter When Property Owner Puts in Standard Curb

Viroqua, Wis.—In order to secure the maximum of street improvements in Viroqua this last season in spite of the high cost of materials and labor, the Common Council passed a resolution which provides that the city shall pay for a 4-foot standard concrete gutter on such streets as are improved, the abutting property owner paying for the standard curb.

The resolution is as follows:

"Be it resolved by the Common Council of Viroqua, Wis., that, whereas it has become necessary to improve the streets in the city of Viroqua by the putting in of cement curbs and gutters; therefore, be it resolved that the property owners along such streets as are to be improved shall pay for the curb, and the city of Viroqua pay for a 4-foot cement gutter; provided that in case any property owner desires an approach to his property the same shall be constructed of cement and shall be paid for by such property owner."

The response from property owners regarding this resolution has been very favorable, and a great many have taken advantage of it and made the necessary improvements along their property. It was designed only to improve certain streets at this time. On one block on which is located the County Normal School two sides of the block are already finished with curb and gutter. A 12-foot sidewalk with grass plot is allowed, and this makes a very noticeable improvement in the appearance of the streets.

E. J. OLDER,
City Clerk.

PARK DEPARTMENTS

Municipal Farm Defends Citizens Against Food Profiteers

ALLENTOWN, PA.—What chance has the food profiteer when a city owns its own great farm and sells the products at reasonable prices in city markets and on the street?

Allentown has a big farm of 400 acres; 200 acres in woodland and 280 under cultivation. Forty-eight acres of truck farm provides enough vegetables to enable the Park Department to invade every section of the city where profiteering is rife and by active competition to force prices down to a reasonable level. The Consumer's League keeps the Park Department informed as to profiteering, the Park Department sends its trucks into different sections loaded with choice food, and the profiteers mend their ways.

Cabbage was selling for 8 to 16 cents per pound. The City Farm began to cut its 20,000 heads of Jersey Wakefield, Copenhagen and Early Succession. The price fell steadily until it reached 2 cents per pound. Sweet corn was selling for 30 to 45 cents per dozen. The Park Department began to pick its 20 acres of fine Evergreen, and advertised that the price would be 20 cents per dozen. This price began to rule all over town, and the city markets offered truck loads at that price. The Park Department now announces that lima beans will sell at 9 cents a quart, unshelled; cantaloupes at 3 and 5 cents each, tomatoes at 5 cents per pound, and other vegetables at corresponding prices.

Pigs are raised on garbage and sweet clover. The Park Department announces that beginning in October it will kill and sell pork at reasonable prices in the markets. Over 100 fat pigs are available.

And any city can adopt this plan and deal with the profiteer.

R. J. WHEELER,
Superintendent, Parks and Public Property.

PUBLIC WORKS DEPARTMENTS

Better Lighting and Water Sterilization for an Oklahoma Town

BLACKWELL, OKLA.—In March, 1919, municipal bonds for $150,000 were voted by the citizens of Blackwell, Okla., for the purpose of making extensive improvements in the water-works and electric light system. Since that date construction work in both departments has progressed rapidly.

A new two-story fire-proof power-house measuring 60 x 72 feet, with white metal finish, has been built, and is one of the most modern municipally owned power-houses in the state. The original equipment of the electric plant consisted of one 500-kw., 2,300-volt Allis-Chalmers unit with surface conductor and two 300-h.p. water-proof boilers. The new equipment purchased with part of the bond issue consists of one 750-kw. Allis-Chalmers unit with service conductors and two 350-h.p. John O'Brien water-tube boilers.

THE BROAD SWEEP OF THE CITY FARM IN ALLENTOWN, PA.

The original equipment of the water-works system consisted of a 500,000-gallon settling basin and one 1,000,000-gallon Grier sand filter. The new equipment consists of a 1,000,000-gallon New York Continental Jewell filter plant with a liquid chlorine apparatus for sterilization and a settling basin with a capacity of 1,500,000 gallons.

Within the last few months 5,000 feet of water-main have been laid, ten miles of electric light extension have been built, and seventy 1,000-candle-power street lamps have been put into service, greatly improving the illumination of the main street of Blackwell.

E. W. BAKER,
Former Superintendent of Public Utilities.

• CITY • ATTORNEYS

Voluntary Contributions Paid For This Plaza

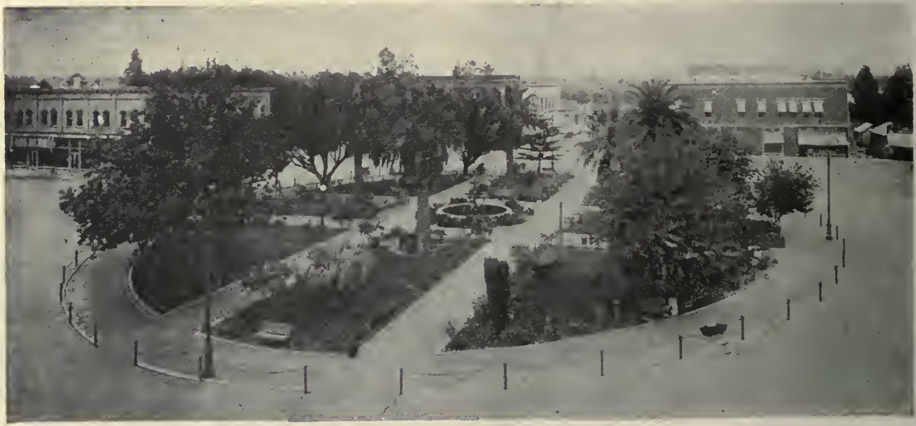
Orange, Calif.—The town of Richland, Cal., afterward named Orange, originally consisted of eight five-acre blocks of twenty lots each. The two principal streets intersected at the center of the town site. Eight lots were set apart at the center of the town for a public plaza and the intersecting streets cut this square into four quarters. These four small squares were planted with pepper trees, which later obstructed the view. Merchants piled their cordwood and empty boxes on the parts near their stores. The owner of the water-works left open the trenches for his pipe-lines, in various directions, so as to be handy for repairs.

Finally with the consent of the Board of Supervisors of Los Angeles County (of which Orange was an incorporated part at that time) the big pepper trees were removed; the ground was broken up and graded toward the center; a landscape gardener laid out the plaza in its present form, and an improvement association was formed. Entertainments of various kinds were promoted, largely by the women, to pay for the fountain and other improvements; rare trees, shrubs and plants were donated by different individuals; altogether about $1,500 was collected and paid out in the first overturning, and some time later over $1,000 more was added for the cement curbs, iron post-and-chain fence, and red gravel for the walks; a fine flagpole over 100 feet high was also erected.

When Orange was incorporated as a city of the sixth class, the plaza was turned over to the city free of debt and in good condition. The city subsequently bought the water-works and adjusted the pipe lines.

With abundance of water and fertilizers the trees, shrubs, plants and grass are kept in thrifty condition. By cultivating quite a variety of flowering plants and shrubs and planting at different times of year, the borders are in bloom the year round. Even what was thought at first to be a disadvantage, its blocking the streets and scattering the business houses, has made it a community center where the people rally for all outdoor entertainments.

W. R. GARRETT,
City Attorney.



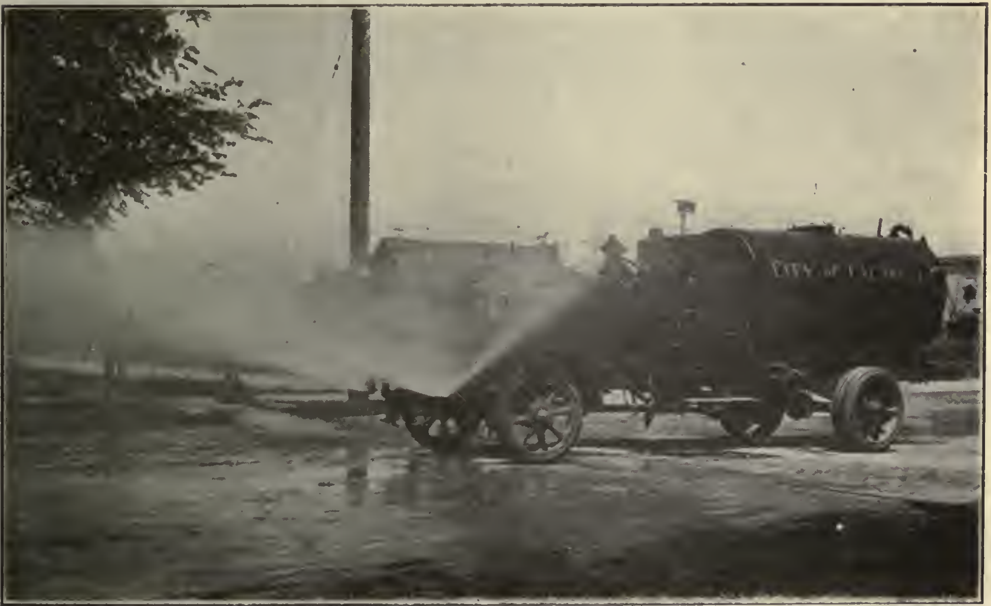
THE TRANSFORMED PLAZA IN ORANGE, CALIF.

Economy of Motorized Street Flushing and Sprinkling

Caldwell, Idaho, Plans to Extend System Next Season

THE SUCCESSFUL MOTOR STREET FLUSHER USED IN CALDWELL, IDAHO

THE city of Caldwell, Idaho, has found it profitable to make use of modern motor equipment for flushing and sprinkling its streets. The accompanying photographs show the Denby motor truck which is used in that city, with its Studebaker sprinkler in action. During last summer this truck covered 505 blocks twice each day, flushing 22 blocks of paved streets. It is intended to increase to 55 the number of blocks of paved streets to be flushed next summer. The average daily haul of the truck is sixty loads of 1,000 gallons each, while the team-drawn sprinklers are each hauling thirty 550-gallon loads. The season's average shows that the truck will sprinkle as much as four horse-drawn sprinklers, at a net monthly saving of $269.89, including 7 per cent interest on the investment, and excluding repairs and depreciation.



USING THE STREET FLUSHER AS A SPRINKLER WHEN THERE IS ONLY DUST TO BE COMBATED SAVES WATER AND MONEY

The Tax Problem as Seen by a Real Estate Man

A New Approach to an Old Question

By C. C. Hieatt

Chairman Taxation Committee, National Association of Real Estate Boards

WHAT phase of government touches every citizen so intimately as taxation? And how can government be honest and worth-while if its burdens be laid unequally on different citizens? The efficiency of government is bound up in and limited by the efficiency and fairness of its tax system. The public opinion of a community which tolerates an unjust system of taxation will breed a low order of government, for, after all, it is by public opinion that the character of government is determined. Now is the time in matters of taxation, as in all other enterprises of government, to strain our every nerve and employ our every energy to get the best that is attainable.

In the first place we must all realize that government supports itself almost entirely by taxation in some form, and that the cost of government is increasing steadily. This increase is progressive and inescapable. From the time when there was no such thing as a paved road or street, a policeman or an electric light, every generation in the advance of civilization has learned to expect and demand more and more from the community in which it lived, and this could only mean an ever-increasing expense in maintaining the community, which in turn brings an ever-increasing levy upon the individual. Every year makes some new demand upon the government to do something for us it has never done before. This is altogether proper. It is the function of democratic government to serve its citizens to the utmost, and it is the duty of that government to see that every citizen pays his just share of the cost of that service.

Rising Costs Present Alternatives

This constant increase in cost means that municipalities must either develop to a point of highest efficiency the sources of revenue that are recognized as peculiarly their own, the chief of which is the real estate tax, or else they must find new sources of income. We are convinced from an exhaustive study of home-owning conditions the country over that homes are already bearing a far heavier burden than they can reasonably carry, and unless some certain method of relief can be devised, the ownership of homes, which is now recognized by the agencies of the Government and by all thoughtful men as the fundamental and most important element in our whole social and political structure, cannot be made attractive.

Home Ownership Must Not Be Made Unattractive

Real estate must always carry a large part of the state and local tax burdens, but it must be a matter of concern to all that this burden shall not fall in such a way as to make home ownership undesirable. Had it not been for the savers in the world we should still be living in roving bands, without any of the improvements which the accumulated savings of generations have provided for us. In all man's progress his finest achievement has been that simple and fundamental institution—the home. The man who saves for a home is not the selfish man; the man who consumes or spends all he produces is selfish. No man ever saved a part of his earnings to build a house or a machine or improve a farm without directly benefiting his fellow man.

There never was a more dangerous or pernicious fallacy than that it is cheaper to pay rent than to own your home. The only real home is the home of the home-owner. Nor must we overlook the fact that a good home is the one real permanent and enduring evidence of thrift. The average life of a machine is ten years, and most other forms of personal wealth are even more transient in character. A well-built house should last at least a hundred years.

and an improved and well-kept farm will continue for centuries to minister to the wants of man. We must not make the tax burden on our most enduring and most desirable asset so heavy as to kill the incentive to its acquisition, improvement and ownership. That obviously would not be the "efficiency" to which we have referred.

The problem, then, is to devise a plan of taxation that will automatically expand with the expanding wealth and demands of each community without becoming an overwhelming burden on any class of property.

Essentials of a Successful System

Our idea is that any successful system must have certain fundamental requirements to entitle it to serious consideration.

First, it must be as simple as possible.

Second, it must be practical and easily administered.

Third, it must be exact in its operation, affecting alike all citizens under the same conditions.

Fourth, it must be direct.

Fifth, it should harmonize as nearly as possible with the ideas and experience already embodied in our tax laws.

Sixth, it must be so framed as to conflict as little as possible with existing federal sources of revenue.

Seventh, it must provide the very large and always increasing revenues needed by our state and local governments.

Four Principal Sources of Revenue

An examination of the tax laws of the various states discloses four principal sources of revenue heretofore depended upon:

1. The first of these sources, and heretofore the main dependence, has been the real property tax levied upon tangible property by the jurisdiction in which it is located. This is altogether justified by the fact that such property receives direct benefits and protection from such local government. This is an unquestioned basis for taxation.

2. The second tax is personal and has sought to make the citizen pay according to his taxable ability. Some states have tried to reach this thru taxing intangible property, including securities and credits, which always represent tangible property somewhere. Only a few states have tried the personal income tax. Other states have levied a tax against the person, or a poll tax, but this is usually nominal and not a real revenue-producer.

3. A third source of revenue has been the license tax, or tax upon business and professions or upon corporate franchises.

4. The fourth source of revenue in general use is the inheritance tax.

There have also been some attempts to collect commodity taxes, but the revenue derived is usually small. The Federal Government has now invaded this field also, making it probably unwise for the states or the cities to use the same sources.

We believe that these principles are so interwoven in the fabric of our tax laws that any new workable system devised must take them into account. The real problem comes in working out a method of application of the several principles that will produce the necessary revenue with fairness and justice to all.

Assessments Should Be at Full Value

We might say here that we stand committed to the proposition that *all property of every class should be assessed at its full value. Every attempt to classify property by varying the percentage of assessable value has resulted in inequalities and therefore in gross injustice.*

We believe in the principle of classification, but the differentiation should come in a variable rate so that each class can know readily what its relative proportion of tax is. Different rates might, for instance, be put upon manufacturing machinery, farm implements, live stock, manufactured articles, merchandise and real estate, and the rate might vary on land and improvements, but the difference should always be in the rate and never in the assessment.

We would further recommend that the entire revenue derived from real estate and tangible property be given to the county or municipality in which it is located. This gives the taxpayer the closest supervision of the assessment and rate imposed on his property and of the use of his money, and further eliminates the possibility of discriminatory methods of assessment in different portions of the same state.

Income Tax Fairest of Personal Taxes

After careful study we have concluded that the fairest personal tax that can be imposed is an income tax—not a tax on the income as such, but using the income merely as an index of the ability of the person to contribute to the government which protects him. It should include income from every source, however derived, except, of course, income from federal or state securities exempted by law, and possibly rents on real property already directly taxed. With the educational influence of the federal income tax, a state income tax ought to be easy to administer. It would supersede and make unnecessary the many attempts now generally unsuccessfully made to tax intangible securities and money, as it would reach these in the most direct and certain way—in the income from them received by the owner at the place where he resides and enjoys the privileges of citizenship. While classification with a low rate on intangible personalty has been found to work wonders in some of the states that have tried it, it is not as surely equal as an income tax and not nearly so flexible. An income tax would also reach a large class of people who live in all our cities—the many salaried and professional men who own no property of assessable value but still enjoy large incomes and under the present system escape almost entirely the personal obligation to contribute to the support of the government that gives them an opportunity to earn largely. A state income tax has been tried with a good measure of success in at least two states, and in general use by all the states should prove not only an effective revenue-producer but a popular tax as well. No fairer means of gauging the citizens' taxable ability than his net income has as yet been devised. It puts that part of the tax burden directly on those able to pay and increases the income of the state as the income of the citizen increases.

All revenue derived from the income tax could go to the state, excluding the municipality, or be divided between them according to their needs. If given to the state exclusively, any surplus should go to the common school fund, as in the matter of education there should be no boundary lines.

Business Tax Should Be Based on Income

The third great source of revenue would be the tax on business, which should be based on the net income of the business transacted in the state levying the tax. It is really a franchise tax on the right to do business, but the fairest way to fix the amount of it is to base it on the net income earned. This is obviously a much fairer method than the flat tax now imposed on certain businesses and professions in many places without regard to earning power. The net income certainly affords the fairest basis of contribution to the Government, and the administration of the federal income tax makes it fairly easy of ascertainment.

No one now disputes the soundness of a moderate inheritance tax, and we believe it should be embodied in any modern system of state taxation.

We are in favor of the separation of the sources of state and municipal taxation to this extent. We believe the state should give the municipality the whole revenue on the real estate and tangible personalty within its boundaries, for the reasons heretofore indicated. Inheritance taxes should go to the state alone. All revenues derived from personal incomes and business could be apportioned between the state and the municipality according to their needs.

States Should Coöperate in Tax Reform

Tax reform in the several states is important enough to receive the attention of all the states. In a concerted movement every state would get the benefit of a tremendous impetus if all the states were moving at the same time.

The constitutions of most of the older states do not restrict the power of the legislators to enact such a system as is proposed. Minnesota and several other states have recently removed constitutional restrictions, and the proper amendment of such constitutions as retain restrictions upon the taxing power should be advocated.

Uniform 100 Per Cent Assessment Foundation of all Tax Reform

Having outlined a system of taxation, we may again advert to the necessity of an absolute and uniform method of assessment that will fix the value on all property alike at 100 per cent. And having secured a straightforward and righteous tax and assessment system, its administration must be thorogoing and impartial, and it then becomes our duty to see that every dollar paid in taxes is honestly expended for the common good.

Acknowledgment.—Based on a paper presented by Mr. Hieatt on behalf of the Taxation Committee at the recent convention of the National Association of Real Estate Boards.

Guarding the City's Health a Full-Time Job

A Forceful Statement of the Dangers of Employing Part-Time Health Officers

By Roy K. Flannagan, M. D.
Assistant Commissioner, Virginia State Board of Health

TO speak of the whole-time judge or even the whole-time policeman sounds foolish. These are officials of long standing and recognized importance, and it goes without saying that their whole time is engaged in public service. Why, then, does not the title "whole-time health officer" sound equally foolish? The fact that it does not furnishes an interesting commentary on the estimate generally placed on material values as compared with human values.

The judge's main function is to see that those who trespass upon the rights of others in respect to person or property shall be properly brought to book. The policeman is simply the agent who takes in charge those who thus trespass. Questions involving property rights have for ages taken most of the time of the courts; property values have therefore inevitably assumed for them weighty proportions.

The health officer's position, however little it may be buttressed by precedent, is of scarcely less importance than that of the judge. Officially, however, he takes no thought of property as such. He deals in human values alone. His function is to see that all—the least as well as the greatest—are safeguarded against anything that tends to imperil health and shorten or render precarious their days. Life is his stock in trade. He operates before the event in order to forestall it. His best work is done in prevention. The causes of disease and death are the objects of his attack, and his efficiency is best shown by the absence of communicable disease within the territory under his jurisdiction.

The judge and the policeman go into action only when somebody gets into trouble —action after event always. The alert health officer is constantly putting into operation plans to keep people out of some of the worst trouble that can happen to them, namely, loss of health and all that such loss implies.

The best man possible should be secured for such a position, and his whole time and thought should be engaged. Under present conditions this is frequently not the case. Every community has some one whom it designates as health officer. Almost invariably he is a doctor, and more often than not he is paid a mere pittance for a pittance of his time. That such an officer should be on part-time service in most of our communities is bad enough, but that the man who is placed in charge of such work should be one whose time when not on duty officially is taken up in pursuing for profit a calling exactly in opposition to that for which he is paid as an official is, to say the least, illogical. To put a physician in charge of the public health as a side line to the practice of medicine, from which most of his income is derived, is much the same in principle as permitting a judge (if such a thing were possible) to practice law in his own court. The health officer must pass judgment constantly on the delinquencies of those who call upon him in his private capacity as physician and fee him for his service. Human nature subjected to such a strain cannot render the highest grade service. This statement is made with full appreciation of the fact that it is to the unselfish part-time physician-health officer that our present public health development is largely due.

As long as the old-time theory obtained about sickness being a visitation of Providence, the man who dealt with sickness was naturally expected to deal with the pestilence when it came. Now that we know that communicable sickness comes from contact with ignorant or careless people who are sick or who have been sick or who have sickness in their homes, the problem resolves itself into a control of the sick people or the poisonous material coming from those who are diseased.

Anyone can readily see that this is not a doctor's matter. It is a question of environment more than it is a question of the diseased person. The doctor in charge can usually be left to see that the patient is looked after properly, but some public functionary must be available to see that those in the vicinity who are not yet sick are safeguarded from the disease. Common sense would dictate that this officer be not a competing physician. If a doctor is to be the health officer (and by training the doctor is generally the best-fitted man in the community for the position) no other work should be permitted him, and his compensation and backing should be such as to make it worth while for him to be energetic, faithful and fearless in the position.

The position of health officer is often considered a sinecure and given to some unsuccessful practitioner with a pull. There being no standard by which to measure his work, things thereafter go on much as usual, so far as one can judge. Since no accurate records are kept, no reports of births, deaths and disease given out, there is no more sickness than ordinary, no more nuisances than usual, the "let-well-enough-alone" policy obtains, and progress in disease prevention is completely blocked.

The man of family pays a heavy tax to his physician. When he reflects that about three-fourths of this tax is by reason of ailments entirely preventable and usually contracted from other people, he must perceive that economy, as well as regard for health and life, demands that a proper health organization be perfected in his community, with a full-time trained man in charge and sufficient funds available to enable him to do his work well.

No town of above 4,000 inhabitants can afford *not* to have a competent whole-time medical health officer. If, in the opinion of those in authority, a town of moderate size cannot afford to finance a well-trained medical health officer for the whole time, it should not then try to make shift with the part-time service of a half-trained physician. Let the town authorities employ the whole-time service of a trained lay sanitary inspector. Health departments all over the country are training good men who may be secured for a moderate sum. The vital preventive work can then go on unhindered.

The recognition of infectious disease has long since ceased to be the most important phase of public health work. The health officer acts on physicians' reports and rarely questions their diagnosis. Where there is a question, the lay health officer can easily secure expert medical opinion at current rates. The only seriously important phase of modern health work which may not be completely directed by a layman is that pertaining to child welfare and school inspection. This work calls for a public health nurse, and no health organization is worthy of the name without one. Private organizations like the Red Cross can usually be counted on to aid in her support.

The following are some of the duties devolving upon a health officer, and should indicate to the most sceptical the importance of his office and the size of his job:

1.—The first and most important duty will be to receive regularly from all physicians *reports* as to births, deaths and contagious diseases. This constitutes the balance sheet of the department.

2.—*Quarantine* for diphtheria, scarlet fever, smallpox, infantile paralysis, and other diseases has to be applied vigorously when the first cases appear, and vaccination against smallpox must be systematically done. Thoro cleansing of premises must be seen to after recovery or death of patients.

3.—*The water-supply* must be watched and constantly safeguarded. Polluted wells and springs must be abolished.

4.—*Sewage disposal* must be as perfect as it is possible to make it, remembering that all infectious disease comes from the excretions and secretions of some other person, and these wastes must be guarded in such a manner that they will not get back to others. Sewers and sanitary privies, then, are public health necessities, and it is the health officer's particular business to see that they are installed.

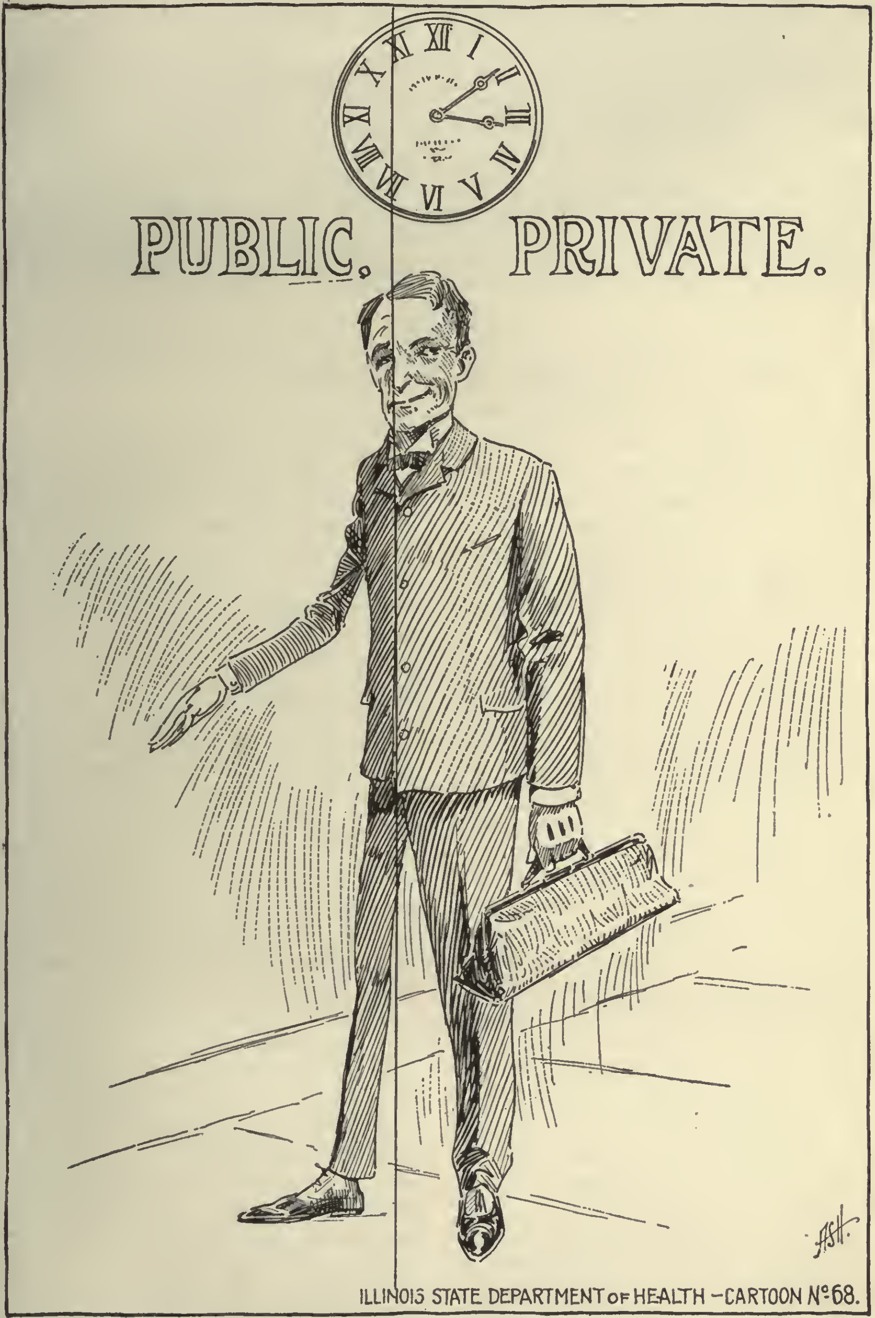
5.—*Nuisances* such as stables, pig-pens, bad drains, standing water and fly-breeding places should come in for attention.

6.—*Milk must be inspected,* both at the farm and at the dealer's.

7.—*Food of all kinds and soft drinks* should be clean, wholesome, and safely handled, and inspection must be made to keep them so.

8.—*Baby welfare,* particularly among the poor, must be religiously looked after. This is a division of the work which absolutely requires the ministry of a trained public

THE·PART-TIME·HEALTH·OFFICER.



ILLINOIS STATE DEPARTMENT OF HEALTH —CARTOON No. 68.

THERE·ARE·EXCEPTIONS—BUT·AS·A·RULE—THE·PART TIME·HEALTH·OFFICER·IS·A·FULL·TIME·JOKE.

health nurse. No town should be without the services of one instructive visiting nurse, and as many more as may be needed. School inspection can be left safely in her hands, as competent physicians are always available to check up her work.

9.—*The schools* must be inspected and defects in children discovered and as far as possible corrected, and vaccinations must be regularly done.

10.—*Housing conditions* of the poor must be improved, and the hot-beds of darkness, dampness and dirt, making for disease, must receive the health officer's atention.

11.—*A laboratory* should be established at the earliest moment, where specimens of milk, water and material from people suspected of infectious diseases may be examined.

12.—*Educational publicity.* And last but not least, cordial relations must be established with every agency in the community working for the public good, especially the newspapers. The best-informed people are always with the health officer in spirit. It must therefore be his care to let them know what he is trying to do, that they may be given an opportunity to aid in the good work.

Some Cities Expect Something for Nothing

To the Editor of The American City:

The salaries paid to local health officers in this state [Indiana] are shamefully low —two cents per inhabitant of the town. For instance, in this town of between 1,200 and 1,300 I receive a salary of $25 per year. Is that compensation for doing anything? I do not know what the county health commissioners are paid.

Personally, I favor "all-the-time" health officers, whose whole business should be the public health and who should be paid adequate salaries for giving their time to that work. They should be allowed to employ assistants or appoint deputies where needed, also for adequate pay.—"X."

A Belittled Public Office

To the Editor of The American City:

I am health officer of a city of about 9,000 population. For several years I did the work of that office for nothing. About five years ago I was allowed $25 a month; later $10 was added for expenses, and when the new milk law went into effect, with the laboratory work which that involved, $15 a month more was added, so I received $50 a month in that roundabout way, but the salary remained $25 a month. I have often felt ashamed to be working for such compensation, but have let the feeling that I was doing something for the public good console me. The work requires about half of my time to do it fairly well; of course many things have to be slighted.

The small pay, however, is not the only drawback to the health officer if he is a practising physician, as most of us are. He cannot do his duty without losing patrons; for every complaint which he acts upon he makes two enemies—one because he does something, the other because he does less than demanded by the complainant.

Every man who has held the office long comes to be regarded by the people as a public servant who is expected to do professional work without pay; consequently he is asked to visit the charity cases, which he cannot refuse without being vigorously condemned. In times of epidemic he is expected to be ever on the alert and step in to look after the contagions which others can avoid. This he often does, jeopardizing himself and his family without extra compensation. Every doctor in general practice who accepts the position of health officer will lose from his patronage more than his salary, as usually paid, if he tries to be a good health officer.

How is the public to be made to appreciate the services of health officers? When a city is enjoying health and is clean and wholesome because of work faithfully done, then the superficial economist thinks there is no need of the expense and moves to cut down the salary of the health department; but when disease is rampant because of neglect and the same fellow is in fear for his own safety, he is loud in demands for active and extreme measures.—"Y."

Hot-Mix Asphalt Pavements

Comprehensive Details Regarding This Type of Modern Pavement—Part II

By Francis P. Smith
Chemical Engineer, New York City

Sheet Asphalt Pavements

Sheet asphalt will sustain a very heavy traffic. This statement applies more especially to a traffic largely composed of quick-moving, light to medium loaded vehicles, such, for instance, as prevails on Fifth Avenue, New York. It is not the most suitable type of pavement for a very dense, slow-moving, heavily loaded, iron-tired traffic. Wood blocks and granite blocks will outlast it under these conditions. It will not give satisfaction where there is practically a total absence of traffic, as it then is liable to develop cracks, apparently requiring the kneading action of traffic to equalize the stresses set up by contraction and expansion and to keep it in proper condition. It is entirely suitable, however, for traffic varying from the light delivery traffic of residence streets to the dense but quick-moving traffic of Fifth Avenue, New York, or the Thames Embankment, London.

On account of their smoothness, sheet asphalt pavements are not suitable for use on excessive grades. Generally speaking, streets carrying a fair amount of traffic can be paved with asphalt if the grade does not exceed 6 per cent. In some cases where the traffic was very light and a smooth pavement was considered essential, it has been laid on grades running up to 10 per cent and 12 per cent, but this is rather exceptional. Where the traffic is heavy, a 3 per cent to 4 per cent grade is usually considered as the limit. In most of the largest cities of the United States the maximum grades on which this type of pavement is laid vary from 4½ per cent to 8 per cent, regulated largely by the traffic and climatic conditions.

Generally speaking, the heavier the traffic, especially iron-tired traffic, the finer should be the mineral aggregate used, on account of the fact that the coarse particles are more liable to fracture than the smaller particles. Where fracture takes place to any considerable extent, rapid deterioration of the pavement will ensue, as the bituminous cement ordinarily used is not sufficiently fluid at atmospheric temperature to rebond and recoat the fractured particles, and these will quickly be pulverized and washed out, leaving depressions where water will accumulate and eventually rot the pavement. Where the traffic, even tho heavy, is largely or wholly composed of rubber-tired vehicles, a greater proportion of coarse particles is permissible and desirable. In proper proportions they add greatly to the stability of the pavement, and under the conditions stated the light traffic mixture given in the table would be entirely suitable if the bitumen were increased to, say, 11 per cent.

The standard sheet asphalt construction of the present day is 1½ inches of binder and 1½ inches of wearing surface. The binder should be of the "close" type, i. e., should contain approximately 20 per cent of material passing an 8-mesh sieve, and approximately 15 per cent each of ¼-inch and ½-inch stone.

A close binder properly made and laid will be superior in many respects to the mixtures which have been laid on a large number of country highways and will carry a fair amount of traffic for a considerable time without suffering any serious damage. Poor binder will break up very easily—sometimes it can be kicked up—and the hauling of the hot surface mixture over it will damage it very seriously. Surface mixture laid on a binder of this kind which has been badly broken up might almost as well be laid on loose broken stone, and will not give satisfactory service under heavy traffic. The binder should, of course, be thoroly compressed with a steam roller before laying the wearing surface on it. Lack of compression will produce an unsatisfactory foundation for the wearing surface, and binder which is too cold or made with too hard an asphalt cement or an insufficient quantity of asphalt cement cannot be properly compressed into a dense, tough mass.

In hauling the binder to the street over long distances, or in very cold weather, it may become chilled below the danger point. During the hauling process a certain amount of surplus asphalt cement usually drains off the stone and accumulates on the bottom of the cart or wagon. If these excessively rich portions be laid on the street, what are called rich or fat spots in the binder course will be produced. As the name implies, there are places carrying an excess of asphalt cement. If these are permitted to remain, the surplus asphalt cement will be absorbed by the hot surface mixture when it is placed over them. This will make a soft spot in the finished pavement which will be displaced by traffic and eventually produce a hole or depression in the pavement. They should, therefore, be cut out and replaced with normal binder.

Before laying the surface mixture on the finished binder course the latter should be dry and swept clean of dirt; otherwise the layer of wearing surface will not adhere properly to it. The binder should be covered with surface mixture as soon as practicable after laying it. In many large cities it is required that all binder laid should be covered the same day with surface mixture.

When delivered upon the street the surface mixture should be of such a temperature that it can be properly compressed, and should be evenly spread by means of hot iron rakes. In many cases the loads of hot surface mixture are dumped directly upon the spot over which they are to be spread. This is bad practice, as the men trample upon it while shoveling and raking it, and the rakes do not thoroly loosen up this trampled material when passing over and thru it. Altho the mixture is raked to a uniform surface and apparently even thickness before it is rolled, those portions which have been trampled on before and during raking are usually covered with a greater quantity of surface mixture than those portions which have not been trampled on and which are covered wholly with what might be termed loose or fluffy mixture. When the roller has completed its work, there will, therefore, be a slight unevenness in the finished surface. Under light traffic this would make no appreciable difference, but under very heavy traffic the slight pounding action resulting from this condition would be detrimental and lead to uneven wear of the pavement.

Proper and thoro compression of the finished mixture is very essential, as this produces a pavement which in its earliest stages is fit to sustain the heaviest traffic. It is always questionable whether portions which are quite lacking in compression will be ground out or eventually consolidated. Under unfavorable conditions the chances are strongly in favor of their being ground out. In those portions of the pavement which are inaccessible to the roller, compression is effected by the use of hot smoothers or tampers, or both. If properly handled, the desired results will be obtained, but if used too hot they will burn the pavement and cause it to scale or grind out. Hot smoothers, particularly, are dangerous tools to put in the hands of incompetent or careless workmen.

Extreme care should be taken to insure a proper union between the surface laid on successive days. The first loads laid in the morning at the point of termination of the previous day's work should be a little hotter than normal so that the hot mixture may soften the cold edge of the pavement and bond perfectly to it. The joint should be beveled and freshly cut away, unless the rope joint or a similar method is employed.

The practice of painting the edge of the joint with hot asphalt cement is not to be recommended, as, unless extreme care is exercised, too much asphalt cement will be used and that portion of the pavement will be too rich in bitumen and consequently softer than the rest, which will result in uneven wear, and possibly in shoving. Great care should be taken not to leave any hump or depression where the joint is made.

Topeka Specification Pavements

Topeka mixture pavements are laid from 2 to 3 inches thick and are frequently placed directly on the foundation. Much better results are obtained by using a binder course 1½ inches thick next to the foundation with a 1½- or 2-inch wearing surface. This greatly reduces the tendency of the finished pavement to shove. With a well-graded mixture a squeegee coat is unnecessary, altho it sometimes is employed.

The mineral aggregate as fed to the drier consists of a mixture of broken stone and sand which is liable to segregate in the bin. The hot aggregate should therefore be screened and separated into two sizes and kept in separate bins. Definite amounts of coarse and fine material should be weighed into each batch. Unless these precautions are observed, portions of the pavement will have an excess of coarse material, and vice versa, and the normal bitumen contents for an average mixture will be too rich for the coarse portion and too lean for the fine portion.

The bitumen content of these mixtures is somewhat lower than for sheet asphalt, and must be very closely watched and kept within much closer limits than are necessary with sheet asphalt mixtures. One half per cent above or below normal is about the permissible variation. Too little bitumen will make a pavement which is too open and porous, and too much bitumen will render the pavement very liable to shoving.

The general methods of manufacturing and laying and the precautions to be observed are substantially the same as for sheet asphalt. The surface of pavements of this type is somewhat rougher than sheet asphalt, hence they can be laid on somewhat steeper grades. They will normally carry a somewhat heavier iron-tired traffic than the coarser bituminous concrete mixtures, but not as heavy a traffic as sheet asphalt. Unless laid under very rigid and competent inspection, it is far safer to use sheet asphalt.

Bituminous Concrete Pavements

Bituminous concrete pavements, as previously noted, have a mineral aggregate consisting wholly or largely of stone of varying sizes from 1½ inches down. Some of them are made of run of the crusher stone and some of them (Bitulithic, etc.) are made of carefully graded aggregates. Where the aggregates are graded, it is customary

A COMPLETED BITUMINOUS CONCRETE ROAD NEAR CHATHAM, N. J.

to separate the different-sized particles in from three to five bins and weigh out a definite amount from each bin for every batch. The normal bitumen content is lower than in Topeka mixture. An excess of bitumen will affect them in much the same way as a Topeka, but to a smaller extent. From 2 to 3 inches of the surface mixture is usually laid directly on the foundation.

It is very difficult to completely close up such a mixture by rolling. It is usually therefore given a squeegee coat of hot bituminous cement, after which the stone chips are spread over the surface and rolled in, the excess being left to be ground away by traffic. In some cases a thin layer of what is substantially a sheet asphalt surface mixture is used as a seal coat, and if this practice is followed the pavement will carry a heavier traffic than if a coarse stone surface, liable to fracture, is left exposed. Pavements of this type will not carry as heavy an iron-tired traffic as sheet asphalt or Topeka. The method of laying them is substantially the same as in the case of Topeka.

Pulverized Earth Pavements

Pulverized earth pavements (National pavement) are usually laid without any binder course and from 1½ to 2½ inches in thickness. They are very rich in bitumen (15 to 20 per cent), but are extremely stable and so malleable that at a temperature of 60-75°F. a piece may be cut out of them and hammered back with a hammer and a perfect cold weld obtained. Their stability is due to the extreme fineness and absorbent properties of the mineral aggregate, and for the same reason it is impossible to wear away the surface by any fracturing or grinding of the individual particles, as they have been reduced to practically their ultimate state of fineness before incorporating them into the pavement.

In many respects they resemble the old French rock pavements, which had an unequalled record for long life. As compared with the French rock pavements, they do not become polished under traffic, but maintain thruout a very wide range of temperature a consistency very closely approaching that of sheet lead; and as they contain from one and one-half times to twice as much bitumen, they are more water-proof and wear-resisting. The clayey material of which they are composed has a much greater affinity for bitumen than any other known paving material, which still further adds to their permanence. With the exceptions noted under the discussion of plants, their manufacture and laying are very similar to sheet asphalt. A National pavement weighs about 170 pounds per square yard 2 inches thick, as compared with 200 pounds per square yard for sheet asphalt of the same thickness.

Their cost is somewhat higher than sheet asphalt, owing to the large amount of water frequently contained in the mineral aggregate and the high percentage of bitumen used in them. They are capable of carrying the heaviest kind of traffic, and when properly constructed mark less in summer than do sheet asphalt pavements and are much less susceptible to shoving and displacement. They are equally suitable for very light traffic. The bituminous cement used in them is about 90 penetration at 77°F, which is much softer than is used in other types of mixed pavements. For this reason they do not become hard and crack even if not subjected to traffic for a considerable length of time.

The City Engineer as the "First Deputy"

The taxpayer's "first deputy" in civic construction enterprises, and particularly in street improvement, is the City Engineer. This man must faithfully represent the property owners as the one who is responsible for the success or failure of the community pavements. He must be experienced in municipal work, skilled in designing and constructing public utilities, must be courageous and ever ready to investigate new methods and materials, and willing to adapt those innovations in which he finds merit to the needs of his city. Such a man is worth many times the salary he asks. The poorest form of economy a city can adopt is to select an engineer of limited ability because he offers to attempt the direction of a city's improvements for a few hundreds or a few thousands less salary than must be paid to secure a competent engineer of genuine ability and character.

The Relative Sanitary Values of Different Types of Drinking Fountains

Part II—How the Fountains are Used, and the Results of Tests of Sloping Stream Types

By Louis V. Dieter*

BEFORE undertaking the comprehensive study of the side-stream type fountains, it was thought expedient to make a more detailed study of the various methods used by drinkers and their bearing upon the sanitary qualities of any fountain. This was not only of great value in determining the causative agent in the infection of the vertical-type bubblers, under practical conditions, but was of immense importance in the determination of the real sanitary value of these new devices, which looked so good at first, and in helping us discover methods for overcoming their defects.

Drinkers Contaminate the Fountains

In observations of the methods used by some 1,500 to 2,000 drinkers from practically all types of fountains, we were at once struck by the large proportion of drinkers that not only will not or cannot use these devices unless they grasp the nozzle with their lips and suck the water. By far the worst offenders are those persons with large, redundant lips endowed with prehensile powers. These I have seen do what seemed next to impossible—protrude their lips down beyond the guard which is placed on some of these devices and grasp the nozzle with the lips before drinking. We have seen such drinkers actually extend their lips down for fully two inches, after first contorting their necks in the most ludicrous manner in order to grasp the nozzle under the so-called guard of some of the new slanting-stream type fountains. Unfortunately, they accomplish their purpose in a good many instances, and even where they are not successful in their attempt the close proximity of their lips to the nozzle allows the washings and mucus to fall back upon it. Then again the "guards" on most of the new type fountains consist simply of strips of material attached to the nozzle end of the bowl, about an inch, or possibly two, above the nozzle and either in a direct line above it or slightly back of it. The upward flow of the water as it describes its arc passes very close to the edge of this guard. Actual observations show that at least 40 per cent of the drinkers place their mouths directly on the guard and by thrusting their heads in the direction of the nozzle not only allow drippings from the mouth to flow over it but seriously contaminate the guard itself with mouth organisms. This guard, not having even the rather doubtful advantage of being flushed with water, serves the next erratic drinker with the contaminating organisms direct and undiluted.

One source of danger that seems to have been entirely overlooked by workers in this field, if the literature on the subject is any criterion, and which in our opinion is as important as mouth contamination, is the pernicious habit of placing the hands and fingers on the nozzles of fountains. In observations made in the school and playgrounds, I venture to say that nearly 50 per cent of the children, particularly boys, are addicted to doing this. They do it in order to "squirt" one another, to try to stop the flow while others are drinking, or just simply to have something to play with. That this is a fact well recognized by drinking fountain manufacturers as well as purchasers is shown by the number of these devices on the market the nozzle of which is so arranged that when the finger or hand is placed upon it the water, instead of being forced out under added pressure, finds an outlet below and thus prevents squirting. These devices do prevent squirting by the playful youngsters, but with the usual disregard for sanitary values they have not been made fool-proof. The fingers that make the unsuccessful attempt to squirt the water from these devices are just as dirty, just as full of mucus, and just as capable of conveying filth and disease-breeding organisms to the nozzle and subsequently to the mouths of drinkers for the next five minutes or an hour as are the fingers that attain the desired result. The child is not the only offender, as I have seen adults carefully wipe the nozzle with their grimy hands and then grasp it with their lips while drinking as tho to make sure that any organisms not left there by their hands would surely be compensated for by the sputum from their mouths. Of course I do not mean to convey the idea that they do this in a spirit of vandalism, but from a hygienic standpoint the results are exactly the same.

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That the danger from finger contamination is not hypothetical was shown by a series of tests made in the schools during the recess period, when we isolated, besides other organisms, in six instances the bacillus coli, an organism whose normal habitat is the intestinal canal. The significance of the finding of this organism on the nozzles that had been free from it immediately preceding the test lies in the possibility of communicating typhoid in this manner from carriers. That we did find this organism was as might have been expected, considering the fact that some of the children make a dash directly from the toilets to the drinking fountain and commonly finger the nozzle in play even before drinking. Furthermore, how many children's fingers are free from germ-laden mucus from the nose and from the mouth, even more dangerous, as a general rule, than other impurities?

In connection with the tests made under practical conditions, following the use of these fountains by drinkers, we have isolated mouth bacteria in all instances, principally streptococci, pneumococci, organisms morphologically identical with the influenza bacillus, and in three instances an organism having all the microscopic characteristics of the diphtheria bacillus. There is no doubt that, from the physical appearance of some of the drinkers we have observed, we could have isolated the bacillus of tuberculosis, or the organism responsible for syphilis, had it been possible to do so with our present methods for the cultivation of these organisms. Swab cultures made from the guards that were brought in contact with the lips of persons during the process of drinking on some of the side-stream types, showed the presence of mouth organisms in nearly all instances.

Is the Side Stream a Safeguard?

In practically all reports describing the results of tests made on vertical-nozzle type fountains the greatest stress has been laid on the fact that organisms dance on the bubble. The fact that, as I have endeavored to point out, there are other and far more persistent causes contributing to the unsanitary properties of these devices has been more or less neglected. Naturally, and I might say unfortunately, considering the simple construction of the great majority of these new devices that are being manufactured with this one idea predominating, it was thought that by simply slanting the nozzle a few degrees the problem would be solved.

To the late Dr. J. J. Kinyoun undoubtedly belongs the credit of having first conceived the advantage to be gained by projecting the stream of water at an angle. This was shortly after we had obtained our first results and had demonstrated the actuality of organisms being held suspended in the bubble for indefinite periods of time, and long before any of the manufactured side-stream types made their appearance on the market. We soon realized from the tests made on our crude device and from our observations as to actual drinking methods that there was a great deal more to be considered in devising a perfect and safe substitute for the monster we had on our hands than simply slanting the stream. Owing to a deficiency of ideas at that time regarding the proper arrangement and construction of guards so that the nozzle and the stream of water projected by it would be absolutely protected against contamination by even the most careless and eccentric drinker, it was temporarily abandoned.

That the side-stream fountain does prevent the organisms from dancing on the bubble there can be no doubt, and in this one way it is an improvement over the old types. Furthermore, it is the first step of any importance to be taken in the improvement of the sanitary qualities of the drinking fountain in over ten years. If everyone would use these devices in the manner intended and in the way we see illustrated in the advertisements, that is, with the lips of the drinker poised directly on the apex of the trajectory formed by the stream of water, our troubles would be at an end, and the drinking fountain problem would be solved. If the guard is so arranged that the mouth can in any way be placed on it during the process of drinking; if the nozzle is exposed so that drippings from the mouth can run over it when used in the above-mentioned way; if a drinker can reach the nozzle with the lips even by contorting the neck and extending the lips a seemingly impossible distance, as I have seen done even with most of the side-stream fountains; if it is possible to touch the nozzle with the fingers; then we can rest assured that there will always be drinkers who will do one or all of these things; and when the nozzle is once contaminated the direction of the stream makes no difference from a sanitary standpoint.

Testing Side-Stream Fountains

The method of testing these fountains necessarily differed in some particulars from those used for testing the vertical type fountains. A culture of B. prodigiosus and then a culture of B. prodigiosus and sputum, egg albumen, etc., poured upon the apex of the curve of the stream constituted the first test. The second test consisted in pouring a culture of B. prodigiosus, sputum, etc., on the stream by resting the edge of the tube on the guard in such a way as to simulate what takes place when a drinker places part of his mouth on the guard or attempts to reach the nozzle with his lips, thus allowing the saliva and mucus from his mouth to wash back over the nozzle. In the third test the guards and nozzles of those fountains that could be and commonly were touched by the lips or fingers were smeared with the culture of B. prodigiosus, sputum, etc., in such a manner as to simulate what takes place when there is contamination due to the mouths or the mucus- and excrement-infected fingers of children and others. All fountains were tested with the stream running both continuously and intermittently.

Some of the types tested were supplied with only one nozzle, others with two, in the latter the streams meeting to supposedly augment the size of the bubble. None of the types were supplied with guards that gave any real protection against contamination either with washings from the mouth or with the fingers, altho in one or two types the nozzle was far enough under the guard to preclude the possibility of even the longest-lipped person grasping it directly in his mouth, but not far enough away or so arranged that it could not be easily touched with the fingers. In two instances an attempt had been made to guard the nozzle, or the holes thru which the water entered, by placing a perforated plate about ¼-inch above these holes. Altho the fingers or the lips could not be placed directly on the nozzles, any saliva and sputum dropping down on the guard during the process of drinking would either run down thru the perforations to the nozzle or be picked up from the edges by the driblets from the stream of water on its upward route. Under practical conditions of usage it was shown that contamination by the mucus-infected fingers of children had the same effect in contaminating the stream. In one other instance a guard consisting of a very small ring of about the diameter of the nozzle and a few centimeters above it, placed there presumably to prevent "squirting," had about the same sanitary value. In either case the total lack of judgment in placing these guards, probably in ignorance of just what was expected to be accomplished, detracted from rather than enhanced the sanitary value of the devices.

The following are the results obtained from tests of some of these side-stream type fountains, which make up Group V. They are described as fountains in which the stream of water coming from the nozzle formed a trajectory, the water being forced from the nozzle at an angle of 15 degrees, more or less. Some of the types were supplied with a catch-basin or bowl to carry off the surplus water. At least three types, intended to be attached to fixtures already installed, contained no such adaptations.

The first fountain examined consisted of a nearly round bulb with a fenestrated face and an indented top. The nozzle was a plate containing two holes set at different angles with the plane of the plate. A nickel guard plate containing two holes slightly larger than those in the nozzle, and in alignment with them, was situated about

¼-inch above and at the same angle as the other. On the first test this fountain showed no organisms present even immediately after using. The second test gave erratic results: with continuous flow, positive at 15 seconds, negative at 20 seconds, but on the duplicate test positive again at 30 seconds and negative at 1 minute; with intermittent flow, positive at 1 minute, negative at 2 minutes, positive at 3 minutes, and negative at 4 minutes and thereafter, the duplicate test showing positive thru 5 minutes with the exception of negative results at 20 seconds, 3 and 4 minutes. The 10- and 15-minute tests were negative. On the third test this fountain with continuous flow gave positive results thru 2 minutes, negative at 3, positive at 4 and 5, and negative at 10 minutes, the duplicate giving positive results thru 1 minute and at 3, 4 and 10 minutes, and negative at 2, 5 and 15 minutes; with intermittent flow this fountain gave positive results thru 30 seconds and at 2, 3, 5 and 10 minutes, negative at 1, 4 and 15 minutes, and the duplicate test showed positive thru 20 seconds and at 1, 2, 4, 5 and 10 minutes and negative at 30 seconds and 3 and 15 minutes.

The second fountain examined had a porcelain bowl at one end of which was placed a nozzle as in the first one of this group, the same in construction and at the same angle. At the nozzle end of the bowl was affixed an enameled guard or hood forming an arc over this end and the water nozzle. The first test showed the fountain entirely free from organisms. The second test gave erratic results, finally negative with continuous flow at 1 minute and with intermittent flow at 5 minutes. The results of the third test were still more erratic—with continuous flow finally negative at 10 minutes, and with intermittent flow finally negative at 15 minutes.

Approximately a dozen different tests, the apparatus being sterilized after each one, were made to determine the cause for the erratic disappearance and reappearance of the organisms. After careful checks had been made, it was conclusively shown that contaminating organisms were picked up from time to time from the edges of the holes in the guard where they had been carried with the sticky mucus and mouth washings running over the guard, and driblets of water from the stream continually carried them upward. Then, again, it was shown that infected water from the bowl splashing back on the nozzles or the guard either ran down thru the holes onto the inlet pipes or was picked up from the edges of the holes as in the previous case, and thus was responsible to some extent for the contamination of the stream.

The nozzle of the next fountain examined was set at an angle on the end of the pipe and backed by a metal shield, shaped like half an egg shell. It was subject to contamination by drippings from the mouth and also by the fingers. There was no bowl. The first test showed no organisms. On the second test this fountain was finally free of organisms at 5 minutes with continuous flow, and at 15 minutes with intermittent flow, the duplicate tests showing less variation than in the previous case. On the third test, with continuous flow the fountain was free of organisms at 15 minutes, but showed positive results thru 15 minutes with intermittent flow.

The next side-stream type examined had a nozzle set at an angle within a larger pipe. This nozzle could not be touched by lips, but was subject to finger contamination and to some extent to contamination by washings from the mouth. No organisms were discovered by the first test. On the second test, with continuous flow organisms were present thru 2 seconds and absent at 3 seconds and thereafter, and with intermittent flow they persisted thru 4 seconds. The third test gave positive results at 15 seconds and negative at 20 seconds with continuous flow, and with intermittent flow positive at 20 seconds and negative at 30.

The next report is on two types of this group. Each had a porcelain bowl at one end of which was placed a nozzle set at an angle. At the same end was affixed a hood about an inch and a half or two inches above the nozzle and partly forming a cover for it. Both were subject to contamination from fingers and washings from the mouth, and, furthermore, it was possible to grasp the nozzle with the lips by going thru a few contortions. All was clear on the first test, as with the other types of slant-jet fountains. The second test gave positive results thruout at 3 minutes and negative at 4 minutes. The third test gave positive re-

ONE TYPE OF TRULY SANITARY DRINKING FOUNTAIN

sults with continuous flow at 10 minutes and negative at 15 minutes, and with intermittent flow positive thru 15 minutes.

The last type of this group had a round porcelain bowl at one side of which was a porcelain nozzle set at an angle. A rather narrow porcelain hood was attached to the bowl, partly over this nozzle. This type was found to be affected by washings from the mouth, drippings from the hood, finger contamination, and the possibility of coming in direct contact with the lips. Two other types with metal bowls and narrow in diameter gave practically the same results when tested. These results were: first test—no organisms appeared; second test—with continuous flow, positive at 4 minutes, negative at 5 minutes, and with intermittent flow positive at 5 minutes and negative at 10 minutes; third test—positive thru 15 minutes.

It will be noted particularly that in test I on slanting-stream fountains, where the culture and the culture with sputum were poured directly on the apex of the curve formed by the stream of water, the organisms were immediately carried away and did not contaminate the subsequent water. In this one way alone all the side-stream type fountains were better than the vertical-nozzle types, as there is at least no independent suspension of organisms in the stream. The most casual observation will show that unless a stream of water from a fountain clears itself of contaminating organisms immediately or at least in two or three seconds, it is worthless from a sanitary standpoint. No child, and as a matter of fact very few adults, will wait even this length of time to follow a preceding drinker when thirsty; in fact, I have seen children during the recreation period in schools and in playgrounds push one another away with their heads in order to obtain a drink quickly. Under any circumstances they follow one another so closely that hardly a second intervenes.

The attempt made by some writers on this subject to base the comparative sanitary qualities of a fountain on the length of time the organisms remain in the stream is, in my opinion, ridiculous. As long as organisms can be suspended in the bubble or carried into it from infected nozzles or guards, even for a length of time ordinarily only sufficient for two or three drinkers, immediately following, to catch the infection, then the fountain is just as unsanitary as tho the organisms were held from one to fifteen minutes. We have absolutely no way to regulate the length of time a person must wait before drinking from these devices after the preceding drinker.

In tests II and III on these devices, which are the most important tests, considering drinking methods, and therefore the manner

ANOTHER TYPE OF FOUNTAIN WHICH HAS PROVED ENTIRELY SAFE in which the worst contamination occurs, it will be seen that in all cases the organisms were found in the stream for a length of time that effectually condemned the fountains as sanitary fixtures. In no case was the nozzle guarded against finger or mouth contamination, and the results show the effect of this dereliction on the hygienic value of the fountains.

The principle of the side-stream fountain is good and forms the nucleus of much experimental work that can be done in the right direction. The fact that the fountains tested did not come up to the required sanitary standard was not because the principle involved defied a basic physical law, as in the case of the vertical-nozzle types, but simply because very little, if any, attention had been given to the most important point, that is, the proper guarding of the nozzle or source of supply. With the ideas of the manufacturers concentrated on only one of the many problems involved, and therefore with the elimination of others of far greater importance in the production of a really sanitary device, we are in a fair way to be once again literally swamped with unsanitary fountains, this time of the side-stream type. Unless we have learned our lesson well, as the result of our unfortunate experience with the other type, and are prepared to judge accurately for ourselves the sanitary value of any fountain presented to us, by an unreserved consideration of the fundamental principles involved, we shall find ourselves, in a year or two, in exactly the same position we are in to-day, and all the work and time spent on the subject will have counted for nothing, as far as the protection of the public health is concerned.

The Strictly Sanitary Fountain

With our present knowledge of the subject, gleaned from actual experience and observations, the choice of a strictly sanitary fountain—and nothing less than this should have even a moment's consideration—should not be a difficult matter, nor does it require any special or technical knowledge. The only requirements necessary are an honest desire to obtain such a fixture, and a careful consideration of the following five points:

I. Is the fountain "fool-proof"? That is, will it be absolutely safe to use it at all times, even immediately after the most careless or diseased drinker, and not to depend even to the slightest degree upon the personal element?

II. Is it possible for organisms or other foreign particles to dance on the bubble?

III. Is it possible for washings from the mouth to fall back upon or splash on the nozzle, regardless of the idiosyncrasies of the drinker?

IV. Is it possible to touch the nozzle with the mouth or with the fingers?

V. Are the guards so situated that any part of the mucus membrane of the mouth could come in contact with any part of the guard during the process of drinking, and thus convey infection from one erratic drinker to another?

If the fountain in question fails to comply with any of the five indicated essentials, it is not a strictly sanitary fountain and should be rejected. Surely we have had enough experience with the pseudo-sanitary types to last us for all time, and, now that the interest of health authorities and the public in general has been aroused to the existing conditions and a demand has been made for drastic improvement, we must not feel satisfied until we have adopted something that is beyond reproach or sensible criticism.

With this end in view, some experiments were made to try to obviate the bad features of the fountains tested and to construct something that would comply with all the five essential requirements noted above. The results were most encouraging, as four or five fountains constructed on these principles and installed in the parks, in the schools, and on the streets in the District of Columbia have so far defied contamination. One of these fountains is installed on one of our most prominent thorofares, Pennsylvania Avenue, opposite the Municipal Building, where great crowds pass daily and where it is subject to every kind of usage imaginable, from all classes of drinkers. As this fountain has been in use for approximately six months and repeated tests have shown that the strain put upon it by the heavy daily usage has not detracted in the slightest degree from its sanitary efficiency, it is considered as conclusive of just what can be accomplished.

Changes Among the Secretaries

A list of the recent changes and new appointments occurring among the secretaries of commercial and civic organizations thruout the United States.

Readers are asked to notify the Editors of such changes as soon as they occur, in order that the list may be made as complete as possible each month.

R. S. ALLEN has been appointed secretary of the Young Men's Business League of Houston, Tex., succeeding W. A. McElroy.

G. CORNELIUS BAKER has been elected secretary of the Community Association at Granville, N. Y. Mr. Baker was formerly general secretary of the Y. M. C. A. at Marion, Ohio.

A. MORGAN CHASE has resigned the secretaryship of the Chamber of Commerce at Sarnia, Ont. He is succeeded by Johnston MacAdam, who recently returned from overseas.

HARRY P. CORCORAN has been appointed manager of the Wheeling, W. Va., Chamber of Commerce, succeeding Captain J. B. Price. Mr. Corcoran was formerly assistant manager of the Wheeling organization.

L. S. DOUGHERTY has resigned the secretaryship of the Chamber of Commerce at Carlisle, Pa., to accept a similar position at Hudson, N. Y.

G. W. DUDDERAR has resigned as secretary of the Clarksburg, W. Va., Chamber of Commerce, to become secretary of the Board of Commerce at Lorain, Ohio.

B. W. GRILLS has been chosen as the new manager of the Chamber of Commerce at McKeesport, Pa., succeeding H. A. Davidson.

E. M. HORNER has tendered his resignation as secretary of the Board of Commerce at Dunkirk, N. Y.

GARLAND HURT is the new secretary of the Newport, Ark., Chamber of Commerce, succeeding C. L. Mariner.

M. T. JACOBS has been chosen as the new secretary of the Chamber of Commerce at Beloit, Wis., succeeding H. E. Owen. Mr. Jacobs was formerly secretary of the Florence, Ala., Chamber of Commerce.

GEORGE W. LEMON has tendered his resignation as manager of the Johnstown, Pa., Chamber of Commerce, to take effect January 1, having recently been elected secretary of the Troy, N. Y., Chamber of Commerce.

ROBERT B. LEOPOLD has resigned the secretaryship of the Athens, Ohio, Chamber of Commerce, to assume a similar position at Cambridge, Ohio.

E. L. McCOLGIN has been selected as the new secretary of the Dayton, Ohio, Chamber of Commerce, succeeding J. T. Nielson. Mr. McColgin was formerly secretary of the Troy, N. Y., Chamber of Commerce.

GEORGE W. MEYERS, formerly connected with the Pennsylvania State Department of Labor and Industry, has been chosen as the secretary of the Tyrone, Pa., Chamber of Commerce, succeeding B. C. Everinghim.

FLORENCE R. S. PHILLIPS has resigned the secretaryship of the Chamber of Commerce at Tallahassee, Fla., to become secretary of the Panama City, Fla., Chamber of Commerce.

HARVEY M. RAYMOND has resigned as secretary of the Edgerton, Wis., Chamber of Commerce. He is succeeded by Willard B. Doty.

A. GORDON SCOTT has resigned as secretary of the Chamber of Commerce of Niagara Falls, Ont., to become associated with the Canadian City Bureau. He is succeeded at Niagara Falls by H. H. Beam.

H. H. SHELDON is the new secretary of the Albion, Mich., Chamber of Commerce.

J. M. SILVEY has resigned the secretaryship of the Chamber of Commerce at Emporia, Kans., to become associated with the Chicago branch of the American City Bureau.

LEON A. SPRAGUE has resigned as secretary of the New Britain, Conn., Chamber of Commerce, to become advertising manager of the New Britain Trust Company.

O. C. TURNER has resigned as secretary of the Chamber of Commerce at Watertown, S. Dak. W. H. Shirley has been selected as temporary secretary.

E. B. WALKER has been elected manager of the Chamber of Commerce at Spartanburg, S. C. Mr. Walker was formerly connected with the Charleston, S. C., Chamber of Commerce.

EARL A. WARNER has resigned the assistant managership of the Kansas City, Kans., Chamber of Commerce, to become secretary of the Chamber of Commerce at Kankakee, Ill.

ROBERT C. WEEBER has resigned the secretaryship of the New Brighton, Pa., Chamber of Commerce, to accept a position as manager of the Sales Promotion Department of the Townsend Manufacturing Company, of New Brighton. He is succeeded by Captain W. N. Cunningham.

JOHN E. WHITE has been chosen as the new secretary of the Chamber of Commerce at Anderson, S. C., succeeding R. E. Grabel.

GEORGE WIGHT has resigned the secretaryship of the Santa Barbara, Cal., Chamber of Commerce.

Sturdy Trucks and Apparatus Used By Progressive American Communities

A DEMONSTRATION OF THE F. W. D. FIRE TRUCK OF THE CLINTONVILLE (WIS.) DEPARTMENT

This apparatus has a 4½-inch suction hose, and in this instance operated with a 9-foot lift and 20 pounds suction at 1,600 revolutions per minute. The pump can throw 600 gallons per minute thru two ¾-inch or one 1¼-inch nozzle.

THE AMERICAN-LAFRANCE APPARATUS OF THE BALTIMORE COUNTY (MARYLAND) FIRE DEPARTMENT IN ACTION

SALT LAKE CITY, UTAH, USES THIS $3\frac{1}{2}$-TON FEDERAL TRUCK WITH TRAILER TO HAUL SNOW TO THE DUMPS

A DUPLEX TRUCK USED IN STREET CONSTRUCTION AND MAINTENANCE WORK BY THE DEPARTMENT OF PUBLIC WORKS, LANSING, MICH.

When teams and wagons were used it cost $1.75 per yard to haul gravel from the pit to the streets in the city. This figure was reduced to 90 cents with Duplex trucks. The work is done more rapidly and at much less cost. Trailers are being installed to still further reduce haulage costs

Are Check Valves Between Public and Private Water-Supplies Necessary or Safe?

Instance of a Public Supply Contaminated by an Inter-connected Private Supply

By Caleb Mills Saville
Manager and Chief Engineer, Water Department, Hartford, Conn.

THE amount of water which can be obtained from underground sources has been made the subject of numerous investigations. There seems to be a general feeling that water which comes from under ground is always of the purest quality, and the deeper the well the better the chance of getting such water. This opinion is probably based on the fact that water slowly percolating thru fine gravel is purified in its journey and oftentimes appears in wells and springs, clear, cold and sparkling.

Reasoning from this, if water can be obtained from deep wells in gravel it is undoubtedly a better water than that from near the surface. The popular fancy is that wells driven into rock are the best source of all. For what, seemingly, could be safer water than that obtained from the interior of a rock with an entrance of water from the surface, cut off by tightly sealing the hole around the casing pipe where it enters the rock?

The Flow of Water Thru Rock Seams

Little thought is usually given to the origin of this water-supply said to come from solid rocks many hundreds of feet below the surface. A block of granite or trap rock or sandstone even casually examined seems to have little capacity for containing water in any quantity, and the most superficial observer would hardly be convinced that water could flow thru the rock at the rate of from 20 to 30 gallons per minute, which is a common rate in the deep wells in Connecticut driven into rock.

By observing the exposed face of any rock quarry, however, we find that the supposedly solid rock is cut into blocks of greater or less extent, by a multitude of seams and oftentimes even by cracks of appreciable extent. These cracks appear to be at all angles, oftentimes even vertical or horizontal. They may be bedding planes as in the sandstones and shales, or may be due to pressure and contraction as in the igneous rocks. Whatever their cause, they may readily form channels down and along which surface water may move with more or less ease.

With this in mind, it requires little imagination to understand that if there is at any depth a horizontal or nearly horizontal bedding plane intersecting these cracks, water from a considerable distance may flow freely under ground with none of the purification effected by its passage thru beds of gravel or sand.

If one of the driven wells penetrating even several hundred feet thru solid rock at last enters a water-bearing crevice, there is every possibility that water drawn from it may be highly polluted from sources long distances away and even from other surface drainage areas.

Contamination of Municipal Water-Supply Discovered

All of the water for the regular public water-supply of Hartford, Conn., is treated with chlorine gas and furnished practically sterile to the city. Secondary infection was discovered by the daily bacteriological tests of tap water. The cause was sought and found in a connection with a private deep well supply to a large establishment located in the center of the city.

In the search for the origin of the pollution many hitherto unknown emergency connections to secondary supplies were discovered. Several secondary fire supply connections to factory properties governed by so-called double check valves were investigated. A careful study of conditions for a few days gave the following results: B. Coli, raw water differential tests, positive; treated water in 10 c.c. differential tests, negative; laboratory tap differential tests, positive in 1 c.c. The amount of chlorine gas used was about 0.86 p.p.m. At this time three supply mains were bringing water to the city, the branching of these from the distributing reservoir being below the sterilization plant.

Altho the B. Coli determinations below this point have been negative, in order to free the source of supply from suspicion, samples were taken from each of the three mains at their entrance to the city. In all tests B. Coli was absent in 10 c.c. samples. This result seemed to indicate conclusively that the water became polluted after reaching the city and that the results from the laboratory tap were due either to carelessness in sampling or to local pollution.

In order to get an idea of the possible location of the source of the trouble, circles defining zones were drawn every ⅛-mile, using the laboratory location as a center. In these zones a number of samples were taken and subjected to intensive examination. At the same time a careful inspection was made of all premises known or suspected of having secondary supplies in deep driven wells. Most of these supplies were used in connection with refrigerating plants, because the water, while too hard for most domestic uses, was a number of degrees colder than the city water and therefore effected a saving in condensing processes. In most cases the connection was of small size and governed by an ordinary gate valve, with the city pressure from 30 to 40 pounds higher than the well pressure. In all cases the city water was available in an emergency in case of failure of the private supply.

The result of the zone tests was very satisfactory and located the probable infection within an area about 2,000 feet square in the heart of the city business district and in the vicinity of the testing laboratory. A careful inspection of the places in the area known to have auxiliary supplies resulted in the elimination of a number where the secondary supply was without question carried always at a lower pressure than the city supply.

The search was thus narrowed to three suspected sources, with evidence most strongly pointing to one of them. Tests of tap water for B. Coli were taken in the vicinity of these three places, with the result that conclusive evidence of the origin of the trouble was located in the place expected, and in the following manner.

On account of drop in pressure in the city system during portions of the day when the draft was considerable, the city water failed to reached the upper stories of the building under consideration. This condition resulted in inadequate service to the sprinkler system, to remedy which a large tank was filled by pumping from a deep well driven into rock, a form of water-supply quite common in Hartford for certain purposes. The tank was connected with the piping from the city mains thru two check valves, one of which was supposed to close when the city pressure rose to a point which would overflow the tank, and the other supposed to close when the city pressure became low, and so prevent water from the tank from flowing into the city mains. The water pipes feeding the sprinkler supply were also tapped and connected so that water could be drawn from either system for supply to some parts of the building, the only safeguard between the two systems being a hand-operated valve. Whether the injection of polluted water was due to a leaking check valve or to someone's carelessly leaving the connection open is unknown. An interesting feature of the case, however, was a complaint received several months previously from a hair-dressing parlor, of the extreme hardness of the water on one or two occasions. As the city water has an alkalinity of from 20 to 25 and the well water about 200, the conclusion as to cause is now obvious, altho at the time little attention was paid to the matter.

Double Check Valve Connections

The order requiring complete severance of all connections with auxiliary supplies taken from sources other than the city supply resulted in a protest from several of the large manufacturing plants in the city. These establishments, in addition to the primary fire protection afforded by the city system, are required by the insurance underwriters to maintain an adequate secondary supply for emergency use. Several of the plants take this supply from a very highly polluted stream running directly thru the heart of the city and not only draining a populous area but also furnishing

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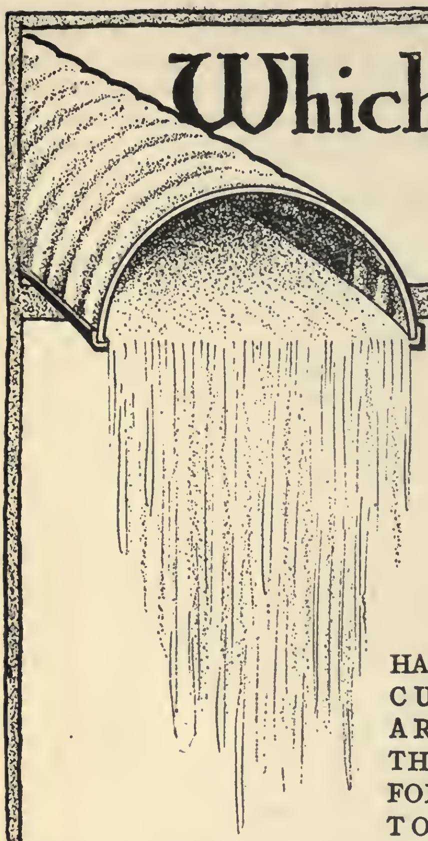

WE make the Half-Round type of culvert from "Genuine Open Hearth Iron" and they can be readily used when the fill is not sufficiently heavy to permit the use of the right size of round riveted pipe for the capacity needed. The bottom sections can be had in lengths of 6, 8 & 10 feet, thereby giving a more rigid culvert than if the bottom were made of shorter sections. The top sections on the other hand are made in multiples of two feet.

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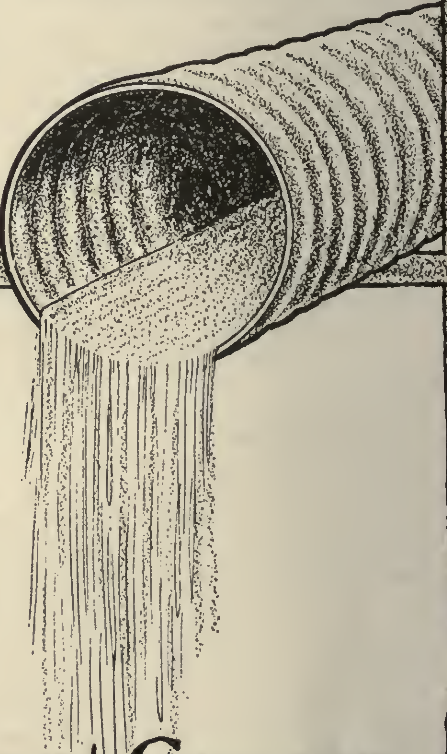

ROUND Riveted Full Circle Corrugated Metal Culverts have come into almost universal use all over the country. Their value is well understood for general use on main highways; they are the best and are invaluable on secondary roads where the service demanded is much greater. Corrugated metal culverts made of any grade of material, are much more easily handled and installed than any other form of culvert construction; but where permanency has to be considered, it is well to have them of the best grade galvanized iron sheets that are on the market. Our "Genuine Open Hearth Iron" is the best. Send us your address so we can send you further particulars.

The Newport Culvert Company

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an outlet for some sewers and overflow for others.

These connections are supposed to be protected by the so-called double check valve system, which, in effect, is a pair of specially constructed check valves 6 or 8 inches in diameter, with connections for draining the valves and testing their tightness, predicated on observation of rise or fall in pressure under conditions of pressure on one side of the valve and none on the other. Theoretically the scheme is perfect, and without doubt the device is in general the most efficient which has as yet been developed if connection must be had between the city water and a polluted source.

Secondary Supplies Necessary, But Inter-Connection Inadvisable

Without question a secondary supply of ample proportion is necessary for the protection of important plants. This is required not only to protect property but to safeguard life and insure continuity of employment to the inhabitants of a city, as well as to hold important industries where they are located.

It is undeniable that if there is a connection between a polluted source and a city water-supply, the public health is in danger. In case the city supply is ample, both in quantity and in pressure, for the primary protection, there seems no reason, except cost, why the secondary protection cannot be furnished by large cisterns under ground or by elevated tanks, both filled with city water. The author is aware of various objections which are offered to this method by some of the fire insurance companies, but it is a fact that in localities where only city water is available the underwriters accept the tank without increase in rates. This appears to be a good criterion on which to base opinion as to the efficacy of this method.

In localities where the public supply is not adequate, it is necessary for the mill pumps to furnish the primary supply, the public supply acting as an auxiliary. In this case there may be some argument in favor of the connection between the two sources of supply. Without in any way minimizing the danger of the connection, the matter resolves itself into a question of expediency for local determination—that is: as a choice of two evils, which is the lesser —danger to public health, or risk of conflagration with its attendant hazard to human life and continuity of employment, not to mention loss of property?

Under the conditions just mentioned, if connection is decided to be necessary, without doubt the double check valve in its latest design will afford the best protection at present available.

Even Double Check Valves Not Reliable

In the ten years' experience of Hartford, with twelve sets of check valves, the records show that eternal vigilance only can keep these valves even approximately tight, that they do leak on the slightest provocation—and sometimes both valves have been found leaking at the same time—and that there is no assurance that they will remain tight even for a short period after test. The custom of inspection is a visit once each week to make pressure tests, and once every four months for a thoro inspection of the entire valve. In considering this matter, one of the best known sanitary specialists in the country, altho endeavoring to see the matter as favorably as possible, felt constrained to say that, while he believed such connections (emergency supplies) could be made of little danger if installed by a properly designed check valve system, the present design was not satisfactory; also that, as a general rule, health officers and practical water-works operators are opposed to connections of this character. The present design was considered eminently satisfactory when brought out ten years ago, and has been hailed as a panacea for all dangers from pollution at connections, yet since that time the device has been the subject of changes in design and is now unequivocally condemned. In view of these facts, the question naturally arises as to how far it is justifiable to proceed with the experiment for the sake of reducing cost when the matter is one involving questions of health, particularly if it is possible to avoid these connections by using other means of insuring safety.

Acknowledgment.—From a paper read at New Orleans, La., October 27, 1919, printed thru the courtesy of the *American Journal of Public Health.*

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Pyromania

Suggestions for Dealing With Those Having an Insane Disposition to Incendiarism

By Ole O. Roe
Former State Fire Marshal of Iowa

WEBSTER defines pyromania as "an insane disposition to incendiarism." An eminent alienist in Iowa defines it as "an impulsion to set things on fire." This same authority states that the mania is most apt to become actively destructive at puberty; that in selected cases persons may be cured of the tendency, but that is the exception and not the rule. The weight of opinion of medical authorities seems to be that pyromania is a form of defective inhibition. It is most commonly found in that rather large class of individuals known as neurasthenics. The disease is notably met with in epileptics, imbeciles and dements.

That the existence of pyromania is not only recognized by medical men but that it prevails to an alarming extent in all grades of society, has, I think, been the experience of everyone who has made the subject of fire causes and fire dangers a practical and close study. In view of this fact, the circumstances attending a number of actual fires which have come under the observation of the State Fire Marshal in Iowa during the last few years are related.

I.

More than seven years ago, in Dubuque, a boy in his 'teens kindled a fire under the stage of an opera house, and waited near-by until the flames and smoke had attracted the attention of the occupants, when an alarm was turned in and the fire was put out with but slight loss. The boy was very active in assisting the fire department—in fact, so much so that their suspicions were aroused, and upon being questioned he confessed that he had set the fire, his sole motive being that he "wanted to see the horses run."

The boy was sent to the reformatory for five years. His period of service was shortened and he was released. After his release, however, mysterious fires began to appear in the city where he had taken up his domicile. The origin of these fires was investigated very closely, but sufficient evidence for prosecution could not be secured. However, when, thru the influence of his parents, he was sent to the Pacific Coast, the peculiar fires ceased immediately.

II.

Between 1907 and 1915 there was a series of fires in the farm neighborhood of Monona County, destroying grain stacks, barns, houses and contents. These fires were investigated, and the confession of a boy of 17 years was secured, in which he stated that he began setting fires when about 9 years of age. He had a complete record of the date of each fire and how it was set. Some of his actions were very peculiar. He seemed normal in every respect; his only explanation why he set the fires was that it "just came into his head and he went and set them." The boy was sent to the hospital for the insane for treatment.

III.

One of the most remarkable cases of active pyromania was that of a high school student, 16 years of age, about four years ago in the town of Estherville. The boy was somewhat precocious, but otherwise apparently normal, except that he developed an insane impulse to set fires. Most of the fires set by him occurred early in the evening. In his confession, secured by the office of the State Fire Marshal, he admitted having set at least a dozen fires, and described minutely just how he set some of them. At one time in walking past a barn door, he found it was not locked. He walked in, saw some excelsior on the floor and thought it a good place to set a fire. He took out a safety match, scratched it twice before it lighted, then set fire to the excelsior and went home. On other occasions, he started several inexcusable fires. He affirmed that all of these fires were set by him without the knowledge of anyone other than his little brother, to whom he stated he paid money to keep the child still.

A Dollar a Day VS Fire Losses Burglaries Hold-Ups Murders

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The boy was sent to the hospital for the insane for treatment. Fortunately, the aggregate loss in these fires was less than $10,000, but their frequency and evident mysterious origin created a reign of terror in the entire community.

IV.

Another strange and sad case of evident pyromania occurred in the spring of 1913 at Council Bluffs, when three distinct attempts were evidently made to set the Y. M. C. A. building on fire.

Suspicion soon attached to the Secretary of the Association, a young man, well educated, of good address and, so far as known, of good character. Detectives were employed in solving the mystery of the fires, and it soon became evident that facts and circumstances surrounding the case very strongly supported the general suspicion.

As soon as it became known that considerable evidence had been gathered tending to implicate the man, his father, who lived in Ohio, filed an information against him charging him with insanity. He was committed to one of the hospitals for the insane. He had been in the hospital less than 60 days when it was stated that the superintendent of the institution considered the young man perfectly normal and felt no longer warranted in detaining him. On this information, the man was released. After certain other legal difficulties, the man was set free. It was learned later that he had been connected with other organizations and there had been a number of mysterious fires.

V

Another case occurred in Perry, a railroad town, in the spring of 1912, where three fires were set in close proximity to each other on the same evening. Circumstantial evidence having been pointed out, a young man 24 years of age, who was employed in the shops of the railroad company, confessed to having set these and some other fires. This young fellow had already served a period in the hospital for inebriates and was addicted to the use of cocaine, and it was when under the influence of narcotics or liquor, or both, that the disposition to set fire overcame him. He was returned to the hospital for inebriates and was confined for several years.

VI

Another case appeared in the city of Davenport during last year. A young man, aged 20, but with the mind of an average boy of 7, confessed to having set six fires in that city during August and October. He also told of having set three fires in Rock Island some four or five years previous to that time. The boy was found to be a degenerate, and was committed to the institution for the feeble-minded. His only excuse for setting the fires was that he enjoyed "seeing the big red wagons go and hearing the firemen cuss at having so many calls" in one vicinity.

VII

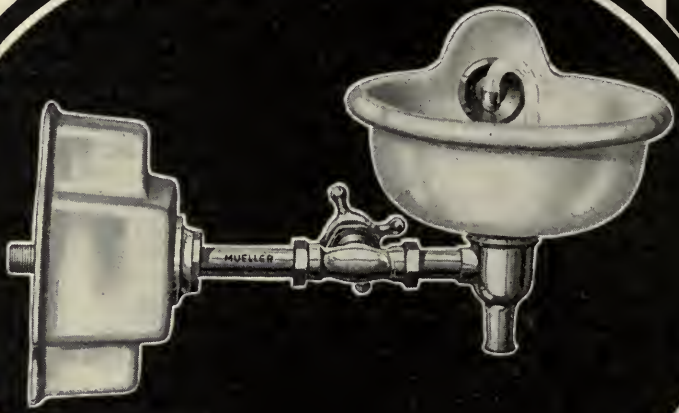
In the summer of 1914 a series of fires occurred in buildings and lumber yards in Cedar Rapids, five of them in two days. A boy of 12 was apprehended, and made a clean-cut confession to setting the fires. He was sent to the industrial schools for two years. Soon after his return, other mysterious fires occurred in the vicinity where he lived, one of them in his own home. The fires aggregated a loss of more than $40,000. He was finally sent to the institution for the feeble-minded. His excuse for setting the fires was that he wanted to see the fire and excitement.

VIII

Between April 15 and April 17, 1913, six fires of suspicious origin, involving a church, a hotel, a box car, and barns, occurred in Sioux City. Four of these fires had the appearance of having been set as quickly as a person could walk from one place to another. A man of mature years, apparently in good physical condition, confessed to having set all these fires, and gave as his reason that he had been abused by some of the police officials, which preyed on his mind to the extent that he decided to get even with someone either by theft or by setting something on fire. This man was sent to the penitentiary for a period of five years.

IX

During a period of more than two years, ending in March, 1917, a series of destructive fires resulting in an aggregate loss of between $30,000 and $40,000 had taken place in the city of Iowa Falls. These fires were repeatedly investigated, and finally



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suspicion pointed very strongly to a man 44 years of age who was the fireman of a stationary engine and worked most of the time at night. In his confession he admitted having set 17 fires during the period named. In his explanation of the reason for setting these fires, he stated that "a feeling came over him" to start a fire, and when this feeling came, it was so strong he could not resist it.

Conclusion

Several other cases could be mentioned as having come under the observation of the State Fire Marshal, but the cases set out above are the leading ones and give an idea of the type of pyromania.

As much publicity as possible is being given to the existence of pyromania, and as a part of the instruction in public schools of Iowa the children are being taught that arson is a crime deserving certain and severe punishment.

In the bulletin prepared for use in the Iowa public schools this subject is referred to in the following manner:

> "There is also a class of persons who are mentally unbalanced and who possess an unnatural desire to watch fire as it burns. These people sometimes start very destructive fires simply for the purpose of seeing the blaze. Such people are termed pyromaniacs.
>
> "As soon as a child or other person shows unnatural tendency to start or enjoy a fire, such person should be carefully watched, as it may be necessary to restrain him. Not a few fires are annually started by persons who, when discovered, are found to be mentally irresponsible."

Education, which in its scope must include saner and purer social relations and gentler living, will in time alleviate, tho perhaps not entirely cure, this and other maladies of the mind.

ACKNOWLEDGMENT:—From a paper read before the National Board of Fire Underwriters and Fire Marshals' Committee in New York City.

Eliminating Manuscript in the Making of Public Records

By Frank C. Merritt
Chief Deputy City Clerk, Oakland, Cal.

MANUSCRIPT in the making of public records has passed its age of usefulness. No modern public office should permit the record of its works to be written by hand. The typewriter and the printing press must be substituted for the antique, inefficient and laborious pen and ink in order to procure uniformity.

We daily puzzle over the handwriting of predecessors in office. We delve into old record books and endeavor to dicipher the hieroglyphics of those who kept the records. We envy the excellency of the Spencerian exponent who formed his letters so well. We follow further and discover that he was evidently sorely overworked, for he employed great patterns of rubber stamps to fill in the oft-repeated phrases of headings, conclusions, etc., and we believe from our examination that he first wrote carefully and then stamped carelessly, for many of the letter markings are illegible because they were too hastily used.

Subsequently city officials secured the services of expert stenographers and they used book typewriter machines to make a perfect compilation in printed words of the old books in which had been written many pages of manuscripts. This method was satisfactory for voluminous records, but we still found it easier to make our index by writing in it, for it was a nuisance to carry each book to the machine and set it at a certain angle in order that only a few words might be typed therein.

Then some one invented a loose-leaf book with a binder that could be permanently locked when the book was completed. This solved the problem, and we discarded the old book typewriter machine and the manuscript forever. No matter what size or shape the book, the loose-leaf pages permit the keeping of uniform records.

There is no puzzling over handwriting peculiarities, no indistinct rubber stamps to decipher, and no effort need be made to decide marks made by lazy clerks.

ACKNOWLEDGMENT.—From a paper read before the Department of Clerks, Auditors and Assessors of the League of California Municipalities.

SOCIAL DISEASES have their birth from insanitary and improper surroundings as much as from any other cause.

Outdoor toilets not only are a disease menace in themselves, but are an embodiment of the mild indecencies, and lack of modesty which all communities are endeavoring to overcome.

Schools provided with outhouses, unclean, and with foul and suggestive pictures are a menace to future generations.

Public officials are responsible for immorality and disease so long as they allow these breeding places to exist.

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Solves with one blow all these problems

"No Sewers or Water Necessary"

Eliminates the outdoor toilet nuisance; endorsed by leading sanitarians - - approved by state, county and city officials.

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North Dakota Provides State Aid for Housing

A FEW years ago state aid for local housing enterprises seemed to be a very vague dream of a far distant future. North Dakota, however, has taken steps to bring that day nearer thru the enactment of Senate Bill No. 19. Opposition developed and a referendum was demanded, but as a result the proposed experiment in direct state aid now starts over again, this time with the approval of the electorate as well as the Legislature. It will be interesting to see how the experiment works out in practice. The act provides that for the purpose of "promoting home building and ownership," the state of North Dakota shall engage in the enterprise of providing homes, and to that end the act establishes a business system operated by the state, to be known as "The Home Building Association of North Dakota."

The Home Building Association is to be operated by the Industrial Commission, which may acquire by purchase, lease or eminent domain all property needed for the realization of its purpose. The Industrial Commission is authorized to construct, repair and remodel buildings, employ a manager and needed subordinates and provide for their compensation and for the expenditures of the association out of the annual appropriation and the earnings legally available for that purpose. The manager is to be bonded for not less than $50,000, and all other employes must be bonded proportionately.

With whatever funds shall be available from the sale of bonds or appropriations by the Legislature, or from deposits received for the association, the Commission shall proceed to undertake the building or purchasing of homes within the state for members of the Home Buyers' League, which is set up by the act. No home shall be built, purchased or sold at a price to exceed $5,000, except farm homes, which may not exceed $10,000. "Home" is defined as a dwelling-house, within or adjacent to a town, village or city, together with such equipments as are customarily used in connection with a dwelling-house. "Farm home" means a tract of agricultural land with dwelling-house, barn, and other necessary farm building equipment. The association is commanded by the statute to make a specialty of building standardized houses, barns and other buildings. The Industrial Commission, upon acquiring a suitable tract of land, may subdivide it, lay out streets, sidewalks, parks and gardens, and after building the homes provide them with water, light and heat.

Any person upon application may open a home buying account with the association thru a Home Buyers' League, trade union, woman's club or other recognized social or civic body. "Special efforts shall be made to secure deposits from children, young people, renters and wage-earners, in order that more people may own their own homes." Provision is made for the withdrawal of any such deposit with interest upon six months' notice. The Home Buyers' League referred to are to consist of ten or more depositors in the association who may form themselves into a local body. Such leagues must be registered. The Secretary-Treasurer of the League shall also be the agent of the association and perform such duties as the Industrial Commission may prescribe.

As soon as a member of a Home Buyers' League has deposited a sum equal to 20 per cent of the total selling price of a home or farm home which he desires, the association is required upon his application to purchase or build such a home for him and convey it to him, the balance to be secured by a purchase money mortgage on the property and to be paid on an amortization plan by means of equal monthly installments, considered sufficient to cover: first, a charge on the loan at a rate to be determined by the Commission; second, a charge for administration not exceeding one per cent per annum on the unpaid principal, the two rates combined constituting the interest rates on the deferred payment, and third, such amounts as, applied to the principal, will extinguish the debt within a period of not less than ten or more than twenty years. Additional payments of $25 or any multiple thereof may be made at any regular installment date.

An interesting provision is the one which

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The San Antonio Public Service Company, in their desire to give the City of San Antonio the last word in Street Lighting Equipment, have recently installed in the beautiful residence section 800 Westinghouse Type CI Luxsolite Fixtures with Holophane Skirted Refractors, and 600 cp., 20 ampere, Mazda C Lamps.

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WESTINGHOUSE ELECTRIC

Miniature Catalogue No. 7A-1 tells all about Westinghouse Luxsolite Fixtures: ask for it.

Westinghouse Electric & Manufacturing Company
East Pittsburgh, Pa.

Westinghouse

states that in case of accident, crop failure or other event which reduces the buyer's reasonable income by one-half, all payments under the contract of the sale may, at the discretion of the Industrial Commission, be extended from time to time for a period of one year. Of course this necessitates a proviso governing additional payments for the interest for the years during which no payments were made.

The Home Buyers' Leagues are thus obviously intended to be local assurance companies safeguarding the investments of the state, for it is provided that the members are jointly and severally liable for all contracts, debts and obligations due the association from the local league to the extent of 15 per cent of the price at which their homes were sold to them.

All funds of the association must be deposited in the Bank of North Dakota and disbursed thru it. Title to the property remaining in the hands of the association is likewise held in the name of the state. The state in the act consents to be sued in civil actions arising out of the transactions of the association. An initial appropriation of $100,000 is made available immediately in the act itself so that the state may assist its citizens to relieve the housing shortage wherever local initiative desires state assistance. Ultimately it is expected that this sum will be paid back to the state out of the earnings of the association.

A Modest Request

A Letter from a City Engineer to the Mayor and Commissioners of a City in the Middle West. It Failed to Bring Results. How Long Are They Likely to Retain an Experienced Man on This Basis? And if They Lose Him, What Kind of Successor Can They Obtain for $1,500?

The Honorable Mayor and Commissioners:

As you know, for the past two or three years all prices have been on the increase, and are still advancing. The *Monthly Labor Review* for June shows that the prices for food in the United States for April, 1919, were increased 4 per cent over those for March, 1919, and each month there has been an added increase.

When the office of City Engineer was created some ten years ago, the salary for that position was set at $1,500 per year, or $125 per month, which was very good for those times. In the last three years the buying power of the dollar has been reduced about 60 per cent, while the salary of the City Engineer has remained the same. It is scarcely necessary for me to dwell on the time required to fit an engineer for the practice of his profession, and to compare the rewards he secures with those obtained by his professional brothers in the practice of law and medicine.

A salary of $125 per month is $4.17 per day. The common laborer now receives from $4 to $6 per day, and he has no responsibilities whatever. Another thing: When the office of City Engineer was created there were no inspections of any kind. Now the City Engineer is the plumbing and electrical inspector, chairman of the Electrical Board of Examiners, and Secretary of the Board of Plumbing Examiners, for all of which he receives no extra remuneration. Since the new electrical ordinance went into effect the inspections have been increased about four times: for three months in 1918 they were as follows—April, 19; May, 12; June, 19; for the corresponding months in 1919 they were 62, 66 and 74 respectively. In 1918 my plumbing inspection fees amounted to $247.55, as compared with $71.75 in 1917, and the electrical inspection fees in 1918 amounted to $180.35, as compared with $67.45 in 1917. So far this year the plumbing inspections amount to $124.75, and the electrical inspections to $173.60.

I believe all city employes except the City Engineer have had at least one raise in salary in the past fifteen months, and some have had two raises. The City Engineer of a nearby city receives $250 per month and has no inspections whatever. The City Engineer of another town of about 4,000 inhabitants receives $150 per month and has no inspections. I am also furnishing my own car to the city free of cost.

I shall appreciate it, gentlemen, if you will give my case some consideration. I think I am entitled to $175 per month.

................, City Engineer.

In Choosing Your City Memorial—

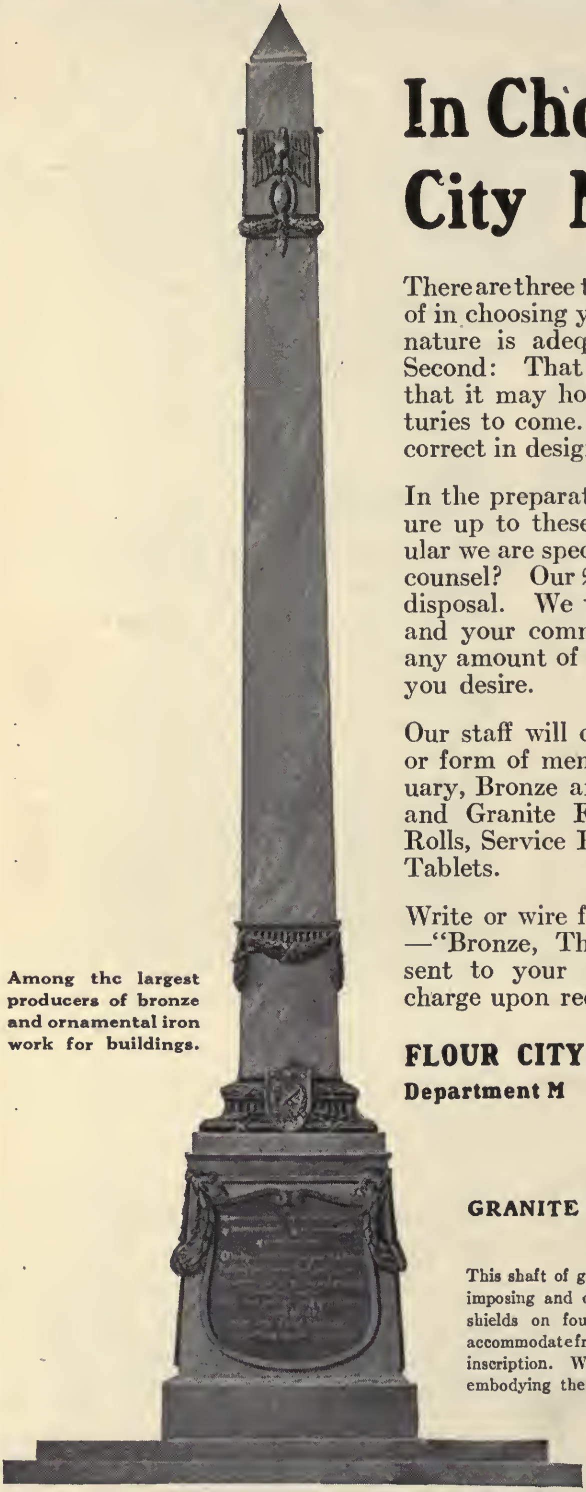
There are three things you will wish to make sure of in choosing your city memorial: First: That nature is adequate to represent your city. Second: That the memorial is enduring so that it may honor those who fought for centuries to come. Third: That the memorial is correct in design and workmanship.

In the preparation of memorials which measure up to these requirements in every particular we are specialists. May we offer you our counsel? Our 26 years of experience is at your disposal. We will be glad to work with you and your committees in person and to take any amount of pains to produce the memorial you desire.

Our staff will originate and prepare any size or form of memorial, including Bronze, Statuary, Bronze and Granite Memorials, Bronze and Granite Fountains, Flag Poles, Honor Rolls, Service Rolls and Individual Memorial Tablets.

Write or wire for full information. Portfolio—"Bronze, The Imperishable Memorial"—sent to your committee members without charge upon request.

FLOUR CITY ORNAMENTAL IRON CO.
Department M MINNEAPOLIS, MINNESOTA



Among the largest producers of bronze and ornamental iron work for buildings.

GRANITE OBELISK WITH BRONZE TABLETS

This shaft of granite with its bronze tablets forms an imposing and dignified civic memorial. The bronze shields on four sides, united by garlands of laurel, accommodate from 1200 to 4000 names, with dedicatory inscription. We will be pleased to prepare designs embodying the suggestions of your local committee.

News and Ideas for Commercial and Civic Organizations

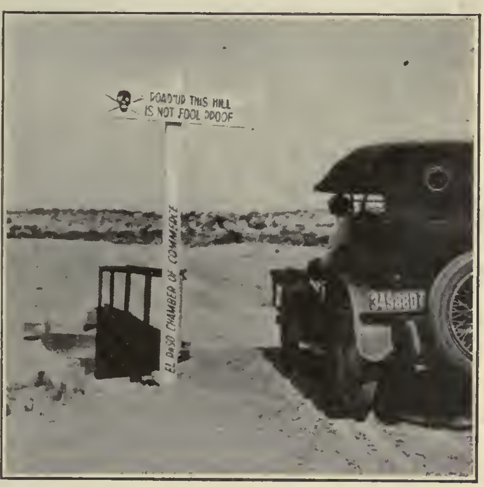
Warning Road Signs Erected by El Paso Chamber

El Paso, Tex.—There are practically no bad roads in the county in which El Paso is situated. Radiating from the city are paved, concrete, and bitulithic roads as fine as can be found anywhere in the country, but the roads extending into New Mexico are not so good, and El Paso's road problems are therefore not in its own county, but in the adjoining state. Road-building is expensive, and it would be too much to expect even as progressive a city as El Paso to undertake the actual construction of roads in the neighboring state. The next best thing is being done, however, and that is the placing of appropriate signs along the roads thruout the Southwest, also the encouraging of better road construction.

About twenty miles out of El Paso is a sandy hill where many motorists come to grief. Here was posted the first sign erected on foreign soil by the El Paso Chamber of Commerce thru its Automotive Trades and Highways Department. It reads: "Private Cemetery at Bottom of Hill for Reckless Drivers." It is a sign that most drivers heed. A sign was placed at the foot of another hill which reads: "Road up This Hill Is Not Fool Proof." On each of these signs appears a skull and cross-bones.

Distinctive signs of this kind are more effective than the ordinary "Danger" signs, according to the experience of the El Paso Chamber of Commerce, and large numbers of them may now be found all thru New Mexico and Arizona. During the month of October more than sixty direction and danger signs were placed along the Borderland Route in those two states at the expense of the El Paso Chamber of Commerce.

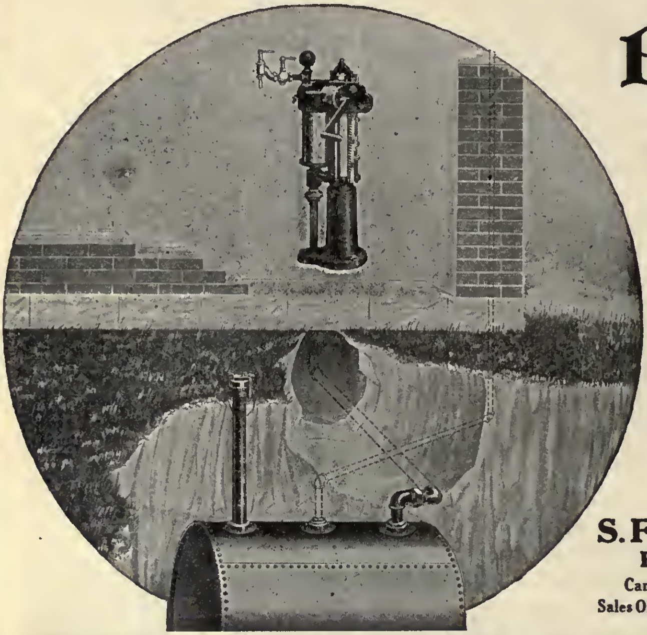
The Chamber does not confine its good-roads activities to erecting road signs, however. The $12,000 road race held under its auspices on November 2 and 3, 1919, did more to stimulate road-building in the surrounding states than anything else since the declaration of war. As a result of the advertising carried on in connection with it, 540.8 miles of road was put into such excellent condition that Hugh Miller, who won the race, was able to make an average of 41.3 miles an hour for the entire distance in his automobile. It also resulted in the Arizona State Highway Department's spending thousands of dollars on roads which otherwise would have been neglected. The citizens of the little town of Lordsburg, N. Mex., raised $1,000 by popular subscription with which to improve the forty-odd miles of road between their town and Rodeo, N. Mex. The Southern Pacific and the El Paso and Southwestern Railways sent out crews to make permanent crossings over their tracks, which had been a source of grief to tourists for years. This and much more was accomplished in the way of road-building by the Desert Dash in November.


ROAD UP THIS HILL IS NOT FOOL PROOF
EL PASO CHAMBER OF COMMERCE

ONE OF THE EL PASO CHAMBER'S DANGER SIGNALS

ROBERT J. PRITCHARD,
Manager, Automotive Trades and Highways Department, El Paso Chamber of Commerce.

Safety and Saving with



BOWSER
ESTABLISHED 1885

Oil Storage

There are thousands of Bowser Underground Gasoline and Oil Storage Systems in use. They keep gasoline and oils free from danger of fire and explosion. They prevent loss of oils and time.

Safety and Saving is sure wherever Bowser Storage Systems are used.

Our illustrated literature will interest you. We will gladly send it on request.

S. F. BOWSER & CO., Inc.
Fort Wayne, Ind., U. S. A.
Canadian Office and Factory, TORONTO, ONT.
Sales Offices in all Centers - Representatives Everywhere

The Reason for Five Figure Losses

TIME and time again fire chiefs have told us that fires have run into five figure losses which could have been put out by an extinguisher if the department had been called quickly enough.

That is the answer. **If the department had been notified quickly enough.**

The fire alarm boxes are so far apart that valuable time is lost getting to the box. Or the telephone is used and mistakes made. Or the person who discovers the fire stays and fights it simply because the boxes are so few that they don't know the location of the nearest one.

The remedy is more boxes and yet more boxes. The way to get more boxes is to educate the members of the city government to their vital need. Our new booklet "A Box a Block" will help you do this. Copies gladly sent to members of your city government. Simply send us their names.

The Gamewell Fire Alarm Telegraph Co.
Offices and Works: NEWTON UPPER FALLS MASSACHUSETTS

Poughkeepsie Motor Busses Capture Fleeing Trade

POUGHKEEPSIE, N. Y.—The Poughkeepsie Chamber of Commerce is much pleased with the results of the system of motor bus transportation which it assisted in inaugurating in the spring of 1918 in order to attract the trade of people living in the outskirts of Poughkeepsie and in the rural suburbs. Both the urban and the rural trade was being diverted to other towns, because the increase in motor bus transportation in and out of Poughkeepsie was making it convenient, and sometimes profitable, for the former patrons of Poughkeepsie mercantile establishments to do their shopping elsewhere. When the merchants and the Poughkeepsie Chamber of Commerce saw what was happening,—that the busses were carrying their patrons into other towns,—they realized that some means would have to be found to reclaim this trade. The Poughkeepsie Chamber accordingly cooperated with the merchants in establishing a system of motor busses of their own, with a central bus terminal in Poughkeepsie. Direct schedules of service to the outlying towns were arranged, and special advertising was instituted, calling the attention of both the urban and the rural population to the inauguration of the service.

The results may be summarized in brief by saying that the rural trade has increased two-fold; that the streets of Poughkeepsie have been rid of the nuisance of motor busses standing in every conceivable place; that the merchants have been able to deliver their packages to their customers with dispatch and safety; and that a service has been provided for the rural shoppers which makes Poughkeepsie virtually the hub of enterprise and commercial activity for them.

ALFRED JENKINS,
Secretary, Poughkeepsie Chamber of Commerce.

Middletown Chamber Carries Oft-Defeated School Bond Project

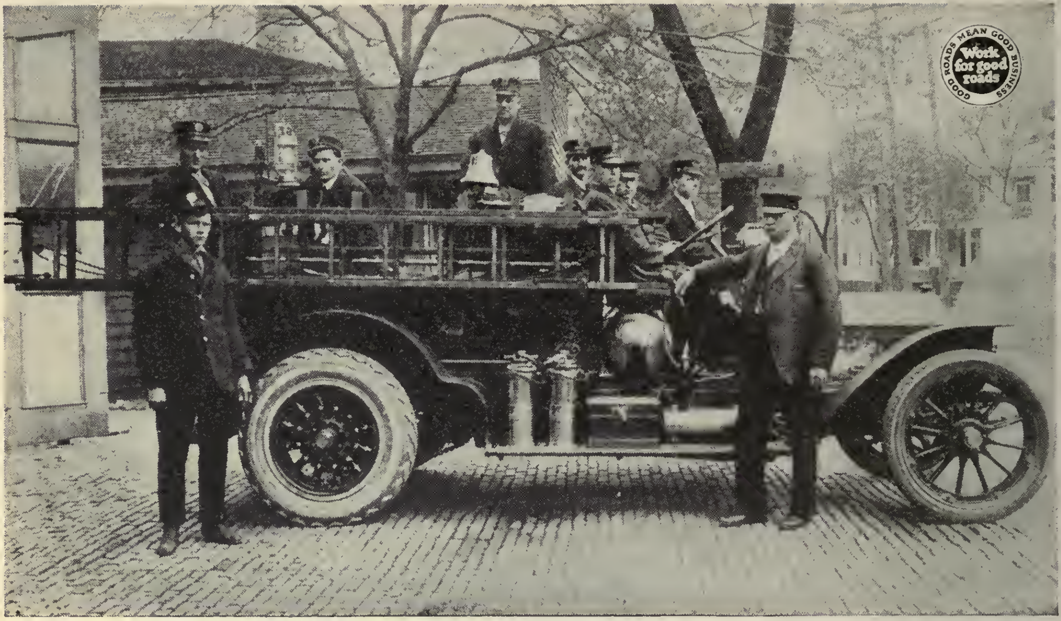
MIDDLETOWN, N. Y.—Three important activities were carried to a successful conclusion during the month of October by the Middletown Chamber of Commerce. One was a school bond issue campaign, which insures the erection of a much-needed grammar school building to cost $356,000, and the other two were money-raising campaigns. An issue of bonds in the sum of $11,500 to cover the difference between the mortgages and the purchase price of a Chamber of Commerce building was oversubscribed and an issue of $30,000 to partially cover the cost of a building for the local branch of a manufacturing concern of national reputation was also subscribed in full.

Intense interest was aroused in the school project thru the campaign conducted by the Chamber of Commerce, which was called in by the Board of Education a week before the question was brought to a vote. For the last ten years the taxpayers of the city have been turning down bond issues for the improvement of Middletown's school facilities, and as a consequence, during the last two years between three and four hundred boys and girls have been going to school on half time. The Chamber of Commerce, however, launched a whirlwind campaign that shattered all organized opposition and produced a two-to-one victory.

The campaign included a parade of 2,500 school children, a tag day, four-minute speeches at theaters and shop meetings, and a systematic effort to get all the voters to the polls on election day. One section of the school children's parade was participated in by the boys and girls who are on half time. They carried banners bearing the words, "We Want a Seat in School," and "Don't Place Dollars Ahead of Us." Another interesting feature consisted of thirty automobile loads of babies. Each car carried a banner reading, "What Are You Going to Do for Us?"

During the parade and on election day high school girls distributed about 15,000 blue tags bearing the inscription, "I Am for the New Grammar School." Yellow tags reading "I Am Not for the New Grammar School" were provided for those who placed a higher value upon money than upon education.

A public mass meeting held in one of the theaters on the Sunday afternoon before the election drew a crowd of 1,600 citizens. A feature of this meeting was the singing of patriotic and school songs by over 500 school children, who were seated on the stage. The speakers included a representative of the State Board of Education, who warned the people of Middletown that


GOOD ROADS MEAN GOOD BUSINESS
Work for good roads

Saving the Minutes on Goodyear Cord Pneumatics

> *"THE Goodyear Cord Pneumatic Truck Tires on our Scott Street Station Fire Truck were purchased in January, 1915. It gives me pleasure to add that this is the most satisfactory equipment with which we have had experience. These pneumatics make it possible to operate our truck more economically and at much greater speed than was possible on the solid tire equipment, which was formerly used on this truck."—E. J. Griffith, Chief, Montgomery (Ala.) Fire Department*

Perhaps there is no feature of fire department work that is more necessary than speed. On Goodyear Cord Pneumatics, fire trucks can attain speed with safety.

In Montgomery, Alabama, E. J. Griffith, chief of the fire department, found this to be so; he has known it for almost five years.

For the Scott Street Station fire truck was equipped in January, 1915, with Goodyear Pneumatics, and still they appear almost as good as new.

But this dependable wear is actually of less importance than the greater speed that it is now possible to get safely with this pneumatic-equipped truck.

The big sharp-edged diamond blocks of the Goodyear All-Weather tread resist skidding; they dig in and give traction even in soft and slippery going.

While the cushioning power of the Goodyear Pneumatics protects the truck from injurious jars and jolts, and greater speed can be made, both the truck mechanisms and the men are protected.

Thus through soft going, over slippery streets, even through deep snow, the Goodyear All-Weather Tread Pneumatics enable trucks using them to make more speed surely, and to do it safely. You can get them at the nearest Goodyear Truck Tire Service Station Dealer.

GOODYEAR

they must either bring their schools up to the required standard or lose the annual educational appropriation of $20,000. This meeting was advertised thru the newspapers, by slides at the motion picture houses, and by announcements in the churches. Telegrams were sent to the ministers asking their coöperation, and calling upon them to urge their congregations to give the boys and girls a fair chance. These met a hearty response and produced the desired results.

Effective work was done at the polls by committees of the Chamber of Commerce, members of the parent-teachers' associations, and high school girls, who made an effort to get out every voter. Calls for automobiles from these workers were promptly attended to by fifty members of the Chamber who held their cars in readiness to drive the voters to the polls.

G. D. THELEEN,
Commissioner, Middletown Chamber of Commerce.

Labor Disputes Adjusted by Oakland Chamber's Common Weal Committee

OAKLAND, CALIF.—The effective work of the Oakland Chamber of Commerce in a street car strike which was paralyzing Oakland a few weeks ago is illustrative of the way in which commercial organizations may help out in such emergencies.

When the motormen and conductors ran their cars into the barns and walked out, 30,000 shipworkers were also on strike. The streets of the city seethed with workless men, many of whom were only too willing to listen to the whispered words of the radicals to "start something." Something did start. Rioting broke out. Shots were fired by the police. The non-unionists became excited and began firing too. Rocks, ship rivets, bottles and other missiles flew. Effort after effort was made to arbitrate. The City Council called both sides before it collectively and individually, but nothing came of this move. It looked as if an impasse had been reached. The future at the moment presented a view of a prolonged struggle, with the public being crushed between the two factions.

At this moment there stepped into the situation an organized, long-established, recognized intermediary, consisting of a committee composed of employers and union officials. In four hours' time both sides had agreed to submit their differences to the State Railroad Commission as a neutral body; three hours later the proffer was accepted, and five hours later the carmen's union had voted to go back to work. Ten hours after that the cars were running with the old crews.

The intermediary was the Common Weal Committee of the Oakland Chamber of Commerce, with a membership of five employers and five union labor men. This committee was formed in 1916, before the war had shown the efficacy of employers and men pulling together.

The settlement of the street car strike is only one of the notable achievements of this committee. It has been constantly active, tho in a quiet manner, since its organization. Thru its mediation, numerous industrial differences have been adjusted before they reached the acute stage. The committee provides a sort of open forum to which employers and employes may come and give vent to their feelings. It has been found that the mountain frequently becomes a molehill when the contending parties are able to meet face to face, tell each other what they think of each other, shake hands and get down to the real business of "give and take." Before the organization of the Common Weal Committee there was no clearing-house in Oakland for handling industrial difficulties. Employer and employe were too inclined to circle around each other like a couple of snarling terriers. Now they pull together for the upbuilding of the community.

EUGENE BOWLES,
Secretary, Publicity Bureau, Oakland Chamber of Commerce.

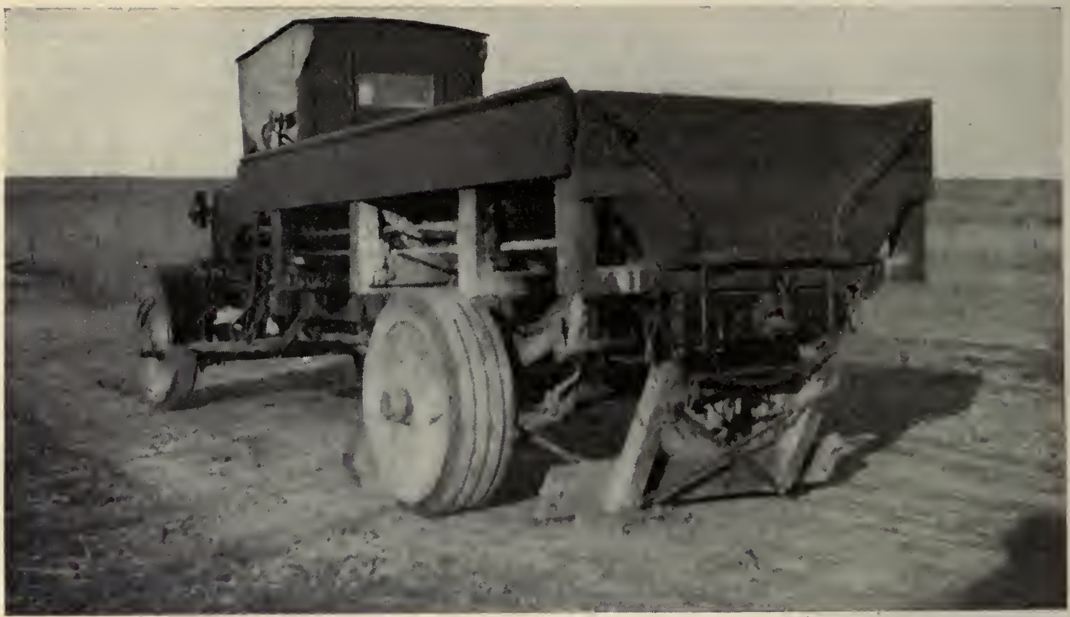
Plan for Giving the Farmer a Square Deal

WILKES-BARRE, PA.—The following communication, which has been sent broadcast to the farmers of Luzerne County by the Executive Committee of the Luzerne County Farm Bureau, an affiliation of the Greater Wilkes-Barre Chamber of Commerce, is the sort of propaganda which should be distributed by commercial and civic organizations generally to offset the pernicious propaganda being circulated by those radical elements now endeavoring to obtain a foothold in this country:

WILKES-BARRE, PA., Nov. 7, 1919.

TO THE FARMERS OF LUZERNE COUNTY:

We are all more or less familiar with the spirit of unrest prevailing thruout the country, and we believe that the farmers of Amer-



THE officials of Canyon County, Idaho, have found this Denby 5-ton, equipped with special hopper-type body and gravel drag, the ideal truck for highway maintenance.

It has the power to go anywhere demanded, over soft roads and up the steepest grades. It places the gravel where they need it and leaves it in shape to be rolled with a minimum of labor.

Our engineers will gladly work with you to give you a truck exactly fitted to your needs,—one that will save you time and labor.

Send for special folder on Denby
Trucks in Municipal Service

DENBY MOTOR TRUCK COMPANY
DETROIT MICHIGAN

DENBY
MOTOR TRUCKS

ica are going to do more to bring about a readjustment of conditions than any other class. At a meeting of the Executive Committee of the Luzerne County Farm Bureau, Saturday, November 1, the following resolution was adopted and ordered submitted to you for your consideration.

By signing the enclosed post-card and returning the same at once, you will be able to join with us in showing the nation that the democracy of America shall be preserved.

Very truly yours,
EXECUTIVE COMMITTEE,
LUZERNE COUNTY FARM BUREAU.

RESOLUTION

Whereas, we, the farmers of Luzerne County, appreciate the efforts of the Luzerne County Farm Bureau and the Greater Wilkes-Barre Chamber of Commerce to bring about a closer relationship between the men of the city and the farmer; and

Whereas, we believe that results attained have been worth while; and

Whereas, while this coöperative spirit should be continued, we believe that in view of the prevailing unrest, socially and industrially, it is wise at this time to invite serious attention to the following:

That the great need of the country to-day is coöperation;

That coöperation should not be restricted to the farmer and the merchant, but to all classes;

That without united coöperation there will be no decrease in the cost of living;

That we condemn the tendency to limit production by making a shorter work-day;

That we consider it manifestly unfair to expect the farmer to work from twelve to sixteen hours a day to feed other classes working only six to eight hours a day;

That it is unjust to ask the farmer to work for greater food production to lower the cost of living and then expect him in the city to pay for merchandise higher prices caused by a reduced production on the part of other classes;

That if the same attitude is assumed by the farmers of Luzerne County, and his production reduced, living costs will be still higher.

Therefore, *be it resolved,* that we vigorously condemn the unnecessary cost of production due to a shorter work-day, and

Be it further resolved that we also condemn the spirit of unrest, bolshevism and destruction, so foreign to American ideals, and take this means of sounding a call to the good citizenship of this county and country to uphold the principles of fair play, and

Be it further resolved that we pledge ourselves to continue to do our part, providing we have the coöperation of all other classes."

HAYDEN WILLIAMS,
Secretary, Greater Wilkes-Barre Chamber of Commerce.

$3,000,000 Worth of New Paving for Wheeling

WHEELING, W. VA.—The most comprehensive street improvement scheme ever launched in Wheeling has been brought to a successful issue thru the instrumentality of the Wheeling Chamber of Commerce. Early in the year an informal conference was held with the City Manager and nine councilmen concerning needed improvements for Wheeling. A short time thereafter, and as a result of that conference, a commission was created by the City Council, in which the Chamber of Commerce was represented, to make a careful study of the subject and report to the City Council with recommendations to be embodied in the draft of a bond ordinance to be submitted to the voters at a later date. The work of this organization was recently completed and resulted in the framing of an ordinance covering the paving of every street now unimproved and needing repair in the city, better water-mains and better sewerage. The proposed ordinance was submitted to the voters on November 6, and carried by more than the three-fifths majority required.

Under the statute governing street paving in Wheeling, the property owners pay two-thirds of the cost and the city one-third. Under this bond ordinance, therefore, nearly $3,000,000 worth of paving will be done. Work will begin as soon as the bonds are floated.

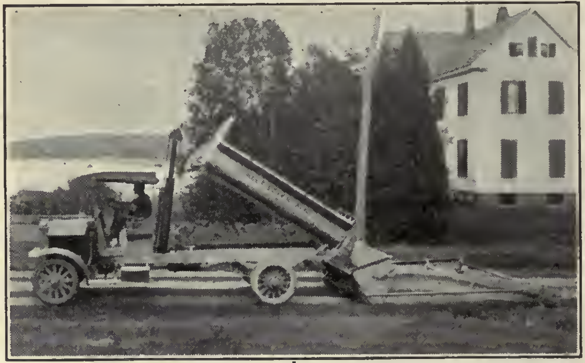
H. P. CORCORAN,
Manager, Wheeling Chamber of Commerce.

McKeesport Chamber Strong Factor in Preserving Order During Steel Strike

MCKEESPORT, PA.—The prompt action of the McKeesport Chamber of Commerce in assisting in the formation of a special police force during the steel strike, when strong and vigorous measures were necessary, resulted in the immediate recognition of the Chamber of Commerce as a power for good and as a leader in the community.

McKeesport is largely foreign, 70 per cents of its population being either of foreign birth or of foreign descent. The Mayor's decision to preserve order should the strike take place was solidly supported by the Chamber of Commerce, whose secretary was authorized to establish, with the Mayor, a special police force to coöperate with the city police in maintaining order as soon as an emergency arose.

A riot took place before the strike was called. A mob of foreigners entered the jail and broke into one of the industrial plants, destroying property and injuring several people. The sheriff of the county immediately took charge, established his own deputies and called upon the constabulary, while the Chamber of Commerce and the Mayor issued a call for men to act as special deputies. Three thousand men responded to this call, were sworn in, and were organized by the Secretary of the Chamber of Commerce into divisions



Another **FEDERAL**

Federal hydraulic hoist dump truck pulling a Burch sand spreader. Owned by City of Laconia, N. H.

This Federal Equivalent to a Gang of Laborers

For road grading and sanding, the city of Laconia, N. H., has certainly hit upon a happy combination for speed, efficiency and economy.

Using a Federal dump truck with hydraulic hoist, and attaching a Burch sand spreader to the rear of the truck's frame, a roadworking unit is obtained which dumps, spreads and grades at one operation.

Need we comment further on the dollars-and-cents economy of such an investment in these days of high-priced labor, Mr. City Engineer?

Prices and complete information on a similar outfit for *your* city will gladly be given on request.

"Return Loads Will Cut Your Haulage Costs"

Federal Motor Truck Company
34 Federal Street Detroit, Mich.

FEDERAL

One to Five Ton Capacities

headed by returned soldiers. Each division met at a stated place, where the members were given badges and were armed with heavy riot sticks, the men holding themselves in readiness to defend the city against further disturbances.

When the strike was called, it took away from the works a number of unskilled laborers, mainly foreigners; the number of native-born men participating in the strike was so small as scarcely to be noticed. The special police force was called into service twice during the strike, once before sunrise and once in the afternoon. The effect of the public appearance of this force, not only on the disorderly element, but upon the city at large, and particularly on the special police themselves, was marked. It united the citizens and awakened in them a stronger sense of personal responsibility to the community.

H. A. DAVIDSON,
Formerly Secretary McKeesport Chamber of Commerce, now Secretary Erie (Pa.) Board of Commerce.

Waterbury's Cost-of-Living Survey

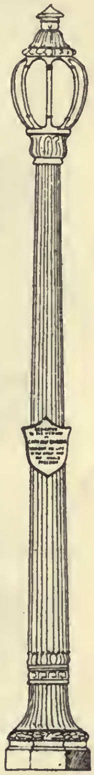
Waterbury, Conn.—There was prevalent in Waterbury a belief that the citizens of that municipality were being charged excessive prices for the necessities of life. In order to ascertain the facts, the Waterbury Chamber of Commerce appointed a committee to make a thoro study of the subject. The committee's findings, published recently, indicated that on the whole the prices in Waterbury were on a level with those in other comparable sections of New England, and did much to satisfy the public that it was not being discriminated against.

The report, which is very comprehensive, contains several carefully prepared charts showing the cost of living in Waterbury in comparison with that in fifty other cities in the United States. It also contains an enumeration of the available statistics that were used as a basis of the study; nine conclusions regarding the remedial factors to be considered; a comparative study of foodstuffs in Waterbury and in fifty other cities; a special survey of the cost of staple articles in eight Connecticut cities; a comparison of the cost of coal and gas in Waterbury and other cities thruout the United States; representative figures indicating price levels in neighborhood stores in Waterbury; and a general discussion. The appendix contains an enumeration of the standard articles taken for the survey of prices in the eight Connecticut cities; a table giving the prices of textiles in Waterbury compared with those in 50 other cities; the wholesale prices of sugar in Waterbury during the shortage of that staple; an analysis of the wholesale and retail produce distribution prices; and a report on the municipal market.

LEROY GIBBS,
Secretary, Waterbury Chamber of Commerce.

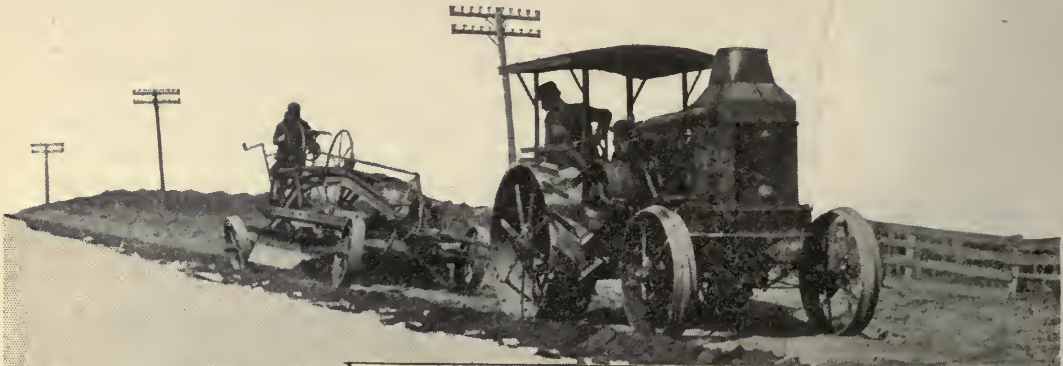
Memorial Lighting Standards for Gloversville Heroes

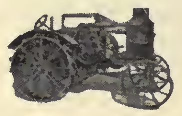
Gloversville, N. Y.—The Gloversville boys who died in the war are to have a permanent memorial in the form of twenty-eight ornamental lighting standards, each to bear a bronze plate displaying the name of one soldier, sailor or marine who died either in camp or in action. The Welcome Home Committee of the Gloversville Chamber of Commerce has made a careful study of the subject of a suitable permanent memorial for these men, and has recommended the installation of the lighting standards. The Common Council has adopted the recommendation. A twenty-ninth standard will be in honor of an English boy, non-citizen resident of Gloversville prior to the war, who fell under Great Britain's flag.


Design of Memorial Lighting Posts for Gloversville

The lights will be purchased with the money which remains from the $10,000 Welcome Home fund that had been raised by the Committee. The balance amounts to about $6,000. The lights will add greatly to the appearance of the business section of the city where they are to be placed, and it is thought that they will constitute as permanent a memorial as any other, because the bronze plates can be changed to other standards if at any time in the future the city wishes to adopt a different lighting system.

The installation of these twenty-nine lights forms the first link of an ornamental lighting system for the entire city. It is also the first step toward the elimination of the

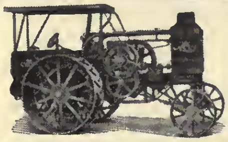




12–20 H.P.

16–30 H.P.

20–40 H.P.



30–60 H.P.

A Size for Every Road Job

With four sizes—from the new 12-20 up to the giant 30-60—the OilPull line of tractors includes a size for *every* road job.

No matter whether it is handling heavy excavating work—performing the lighest maintenance work—or any job in between, there is an OilPull of the correct capacity.

The OilPull line includes the 30-60, 20-40, 16-30 and 12-20—all standard in design. For over ten years OilPulls have proved their unequaled economy of operation—but as if this were not enough, every OilPull owner is given a written guarantee that it will successfully operate on all grades of kerosene under all conditions and at all loads up to its full rated brake horse power.

All sizes of OilPulls are ideal road tractors because they have that measure of ruggedness and strength that overcomes the difficulties of road-work.

Each size is famous for efficient, economical performance—strength of construction, long life and low cost of upkeep—ease of handling and simplicity of operation.

The OilPull catalog describes each size.

ADVANCE-RUMELY THRESHER CO., *Inc.*
La Porte, Indiana

BACKED BY WRITTEN GUARANTEE

ADVANCE-RUMELY

overhead wiring. The committee recommended a Novalux ornamental unit lamp with an eight-panel diffusing globe, the lamp to be the 600-horse-power Mazda type. The tablets will be about 15 inches high and 12 inches broad, and will contain an inscription reading somewhat as follows:

IN HONOR OF ....
A HERO OF THE WORLD WAR
Killed ...., 191..

J. KENNARD JOHNSON,
Manager, Gloversville Chamber of Commerce.

New Officers and Directors of the N. A. C. O. S.

At the annual meeting of the National Association of Commercial Organization Secretaries, held at Indianapolis October 27-29, 1919, the following officers and directors were elected for the ensuing year:

OFFICERS

President, George E. Foss, Secretary, Pennsylvania State Chamber of Commerce, Harrisburg, Pa.

First Vice-President, Robert B. Beach, Assistant Business Manager, Association of Commerce, Chicago, Ill.

Second Vice-President, C. F. Holland, Secretary, Chamber of Commerce, Jackson, Mich.

Secretary-Treasurer, F. D. E. Babcock, Secretary, Chamber of Commerce, Worcester, Mass.

DIRECTORS

F. D. E. Babcock, Worcester (Mass.) Chamber of Commerce.

Robert B. Beach, Chicago (Ill.) Association of Commerce.

Paul V. Bunn, St. Louis (Mo.) Chamber of Commerce.

L. P. Dickie, Tampa (Fla.) Board of Trade.

J. A. Ford, Spokane (Wash.) Chamber of Commerce.

George E. Foss, Pennsylvania State Chamber of Commerce, Harrisburg, Pa.

James Z. George, Texas Chamber of Commerce, Dallas, Tex.

Munson Havens, Cleveland (Ohio) Chamber of Commerce.

C. F. Holland, Jackson (Mich.) Chamber of Commerce.

New Bulletins

BUTLER, PA.—*Butler*, the official monthly publication of the Butler Chamber of Commerce.

CRAWFORDSVILLE, IND.—*Community Bulletin*, the official monthly publication of the Montgomery County Chamber of Commerce.

DANVILLE, ILL.—*Greater Danville*, the official monthly bulletin of the Danville Chamber of Commerce.

HORNELL, N. Y.—*Hornell Chamber of Commerce Bulletin*, the official monthly organ of the Hornell Chamber of Commerce.

LA PORTE, IND.—*La Porte Prosperity*, the official monthly bulletin of the La Porte Chamber of Commerce.

NEWARK, OHIO.—*Community Progress*, the official monthly organ of the Newark Chamber of Commerce.

NOWATA, OKLA.—*Nowata*, the official monthly bulletin of the Nowata Chamber of Commerce.

OWENSBORO, KY.—*For Owensboro*, the official bulletin of the Owensboro Chamber of Commerce.

PETERSBURG, VA.—*The People's Affair*, the official organ of the Petersburg Young Men's Business Club.

PONTIAC, MICH.—*The Periscope*, published monthly by the Pontiac Board of Commerce.

POTTSVILLE, PA.—*Pottsville Chamber of Commerce Bulletin*, the official publication of the Pottsville Chamber of Commerce.

SOUTH RIVER, N. J.—*Chamber of Commerce Bulletin*, the official monthly bulletin of the South River Chamber of Commerce.

YOAKUM, TEX.—*The Yoakum-ite*, published monthly by the Yoakum Commercial Club.

YOUNGSTOWN, OHIO.—*The Needle*, the official monthly bulletin of the Youngstown Chamber of Commerce.

Recently Issued Printed Matter

ALBANY, N. Y.—"Albany" is the title of an illustrated booklet describing Albany issued by the Chamber of Commerce.

BARTLESVILLE, OKLA.—"Bartlesville, Washington County, Oklahoma," is the title of a descriptive folder, containing illustrations, issued by the Bartlesville Chamber of Commerce.

LITTLE FALLS, MONT.—The Board of Commerce of Little Falls has issued a booklet entitled "Morrison County, Minnesota, A Diversified County," containing information of interest to the agriculturalist, the dairyman and the bee keeper. A leaflet "Featuring a Few Facts of Little Falls" has also been issued.

LONDON, ONT.—The London Chamber of Commerce has issued its annual report.

MACON, GA.—"Macon, the Heart of Georgia," is the title of an illustrated booklet regarding Macon issued by the Chamber of Commerce.

MADISON, WIS.—A list of the activities of the Madison Association of Commerce during the past year is contained in a large one-page folder issued by the Association.

MEMPHIS, TENN.—"Memphis, in the Heart of the Mississippi Valley," is the title of a leaflet issued by the Memphis Chamber of Commerce.

MIAMI, FLA.—"Miami By the Sea" is the title of an illustrated booklet issued by the Miami Chamber of Commerce.

PORT HURON, MICH.—A "Classified Business and Telephone Directory of Members" has been issued by the Port Huron Chamber of Commerce, also a leaflet entitled "Facts About a Progressive City."

ST. JOHN, N. B.—The Board of Trade has issued a leaflet entitled "St. John, New Brunswick," containing information regarding industrial opportunities in St. John; also a leaflet entitled "All Roads By Land and Sea Lead to the Winter Port of St. John, N. B."

SARNIA, ONT.—"Why We Live" is the title of a leaflet containing facts regarding Sarnia and two maps, issued by the Sarnia Chamber of Commerce.

TRENTON, N. J.—A printed referendum on daylight saving has been issued by the Trenton Chamber of Commerce.

TROY, N. Y.—"Troy, New York," is the title of an illustrated folder issued by the Troy Chamber of Commerce.

WACO, TEX.—The Waco Chamber of Commerce has issued a leaflet containing a map of McLennan County, Tex., showing oil development in the county and giving facts regarding Waco.

WATERBURY, CONN.—The Waterbury Chamber of Commerce has published the report of a "Survey of Price Levels in Waterbury Compared with Other Cities for Various Dates in 1919," made by a committee of the Chamber.

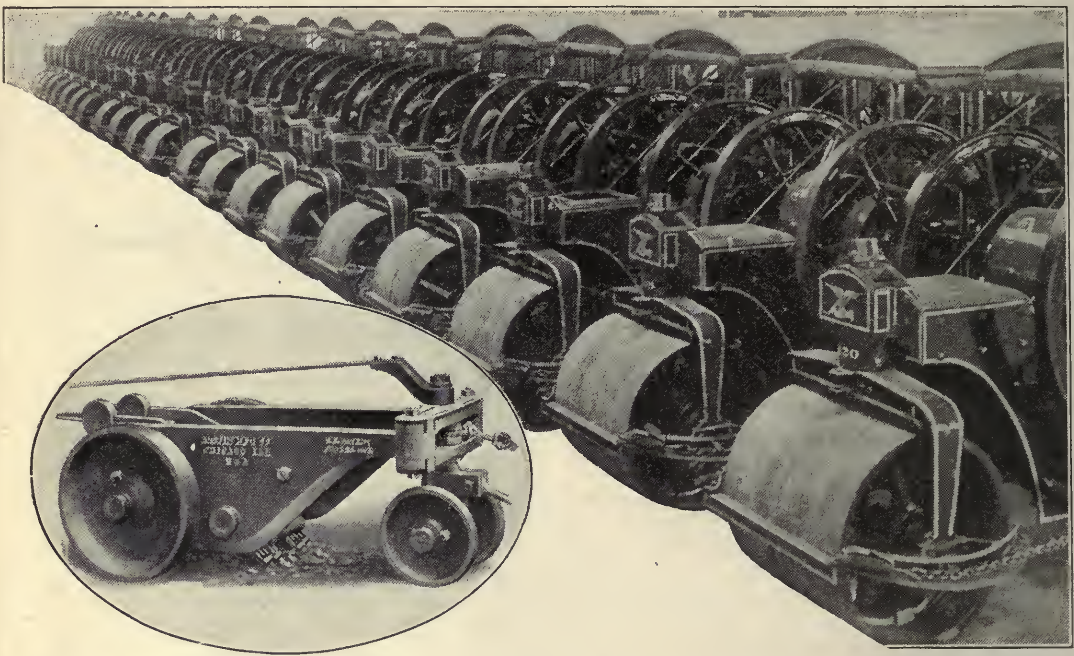
WHEELING, W. VA.—The "Annual Report of the Activities and Accomplishments of the Wheeling Chamber of Commerce" was published in *The Wheeling Telegraph* of November 5, 1919.

WINNIPEG, MAN.—The first annual report of the Winnipeg Board of Trade has been published. The Retail Trade Bureau of the organization has also published a booklet entitled "The Basis for Determining Profits in Retail Trade."

PENNSYLVANIA STATE CHAMBER OF COMMERCE.—The Proceedings of the first annual meeting of the organization, held at Harrisburg, September 29-30, 1919, has been published.

"The International Commercial Register" is the title of a commercial directory published by James E. Almond, of Wabash, Ind., "containing the name of the President and Secretary of every Chamber of Commerce in the United States, Canada and Cuba, together with important commercial information from each city."

"A Proposed Bill to Legalize the Adoption of Commission or Commission-Manager Form of Government for Indiana Cities," prepared by Prof. A. R. Hatton, has been published in pamphlet form and is being distributed by the Indiana Commercial Secretaries Association. For copies, address John E. Northway, Columbus, Ind.



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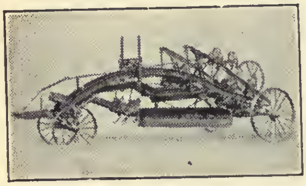

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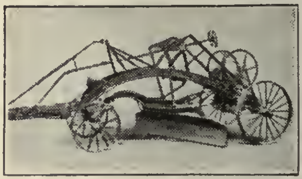

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Road Scarifiers
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Horse Drawn Sweepers
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Dump Wagons
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The City's Legal Rights and Duties

Monthly Department of Information for City Attorneys and Other Municipal Officers, Summarizing Important Court Decisions and Legislation

Conducted by A. L. H. Street, Attorney at Law

Adopting Ordinances—Increasing Service Rates

An ordinance purporting to increase electric light and water rates as fixed by a municipal franchise is void where the yeas and nays were not called and recorded, as required by a state law governing the adoption of ordinances, holds the Arkansas Supreme Court in the recent case of Cooley vs. Arkansas Light & Power Co. (211 Southwestern Reporter, 664). The Court declares that the requirement for calling and recording the yeas and nays is mandatory, being intended "to make the members of the council feel the responsibility of their action when important measures are before them, and to compel each member to bear his share in the responsibility by a record of his action which should not afterwards be open to dispute."

The opinion recognizes the right of municipal authorities to increase the rates that may be charged by a public service corporation notwithstanding the fact that there exists an unexpired franchise fixing a schedule of rates. It is held that a city in granting a franchise specifying maximum rates to be charged for service during the life of the franchise acts for the private benefit of itself and its inhabitants, and that its contracts of this character are governed by the same rules that govern contracts of private individuals. That is, the contract is subject to modification by mutual consent of the parties thereto.

Invalid Municipal Proceedings

Where a special meeting of a municipal board of trustees was void because proper written notice had not been given and the full membership was not present, action taken at that meeting toward the purchase of property was without effect, and could not be given life at a subsequent meeting by purported ratification. (California District Court of Appeal, City of Orange vs. Clement, 183 Pacific Reporter, 189.)

Lowest Bidder's Right to Award

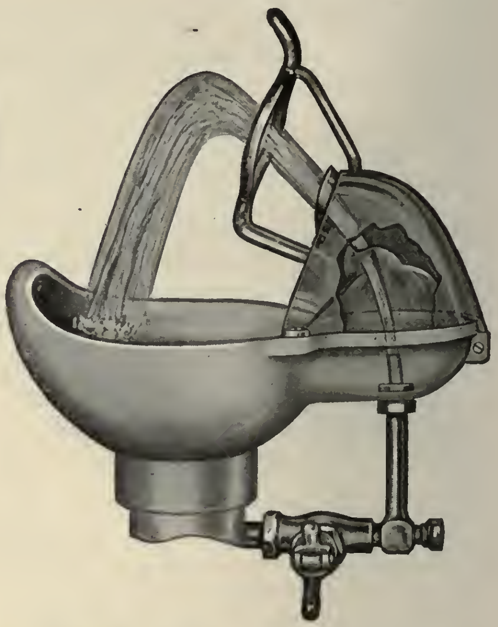
Under the Buffalo charter the lowest responsible bidder for a municipal contract is entitled to compel award of the contract to him, unless all bids are rejected or unless there is room for the exercise of reasonable discretion on the part of the municipal authorities. But where tractors were purchased for use in connection with flusher trailers the city officers could validly award a contract to a higher bidder, under a good faith purpose to secure standardization of the city's equipment, with the advantages of interchangeability of parts, etc. On the other hand, no valid discrimination can be made between competing bidders on the ground that the favored one owns an important local industry. (New York Supreme Court, People vs. City of Buffalo, 176 New York Supplement, 642.)

EDITOR'S NOTE.—It is strongly intimated in the opinion, however, that the proceedings in this instance might be invalid, on the ground that the specifications were so drawn as to virtually exclude competition. "Of course," says the Court, "specifications which would exclude competition are a plain violation of the statute."

Necessity for Written Contracts

Where additional grading was done under a Philadelphia paving contract without agreement therefor having been reduced to writing, as required by the charter of the city, the contractor could not recover compensation, altho the Director of Public Works, in a letter to the Chief of the Bureau of Highways, had suggested a basis of compensation, which was approved by the latter, who then orally directed that the additional work be done. "Anyone dealing with the municipality is obliged to know the necessity for a contract in strict accordance with the law before there can be a legal obligation binding the municipality. It has been held that the acceptance of a proposal is not a contract, but merely part of the negotiations leading to one." (Pennsylvania Supreme Court, Union Pav-

Puro



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WE say "pure" advisedly—because the Puro Liberty drinking fountain is the nearest to 100% sanitary than any other fountain manufactured. The trouble with most of the so called "sanitary fountains" today lies in the fact that they are designed with vertical jets. Such a fountain does more harm than good, because the water which has touched the lips may fall back upon the metal top or bubblers and seriously contaminate the source of supply. The next drinker gets the germs. This applies to both the intermittent and continuous flow fountains.

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is doubly safe—because it has a sloping stream and a mouth guard. It is utterly impossible for lips to touch the jet or for the water to fall back. The Puro is the most sensible and most sanitary drinking fountain on the market today. It fulfills all requirements of cleanliness, economy and design. Equip your public buildings and parks with Puro Liberty Fountains.

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Puro Sanitary Drinking Fountain Company
HAYDENVILLE, MASS., U. S. A.

ing Co. vs. City of Philadelphia, 107 Atlantic Reporter, 370.)

Unguarded Retaining Walls

A city was grossly negligent in failing to place any guard along the retaining wall of a street extending along the side of a creek from 7 to 11 feet below. But, notwithstanding such negligence, a pedestrian cannot recover damages for falling over the wall, where, tho the night was dark, she was familiar with the street, and had three safer and better lighted routes, and did not look where she was going. (Pennsylvania Supreme Court, Haughney vs. Mahanoy City Borough, 107 Atlantic Reporter, 843.)

Regulation of Laundries

In the regulation of laundries, a city ordinance defining a public laundry to be any premises, etc., used for the purpose of laundering certain washable articles "for thirty or more owners of such articles per week, and for pay," is not unreasonable nor discriminatory. The basis of classification therein employed is natural and reasonable, and the provisions of the ordinance operate uniformly upon the class therein named. When a city has the right, under its police power, to impose regulations upon a business, the validity of an ordinance cannot be attacked merely because its scope was not extended to cover the entire field of possible abuses which such ordinance seeks to prevent. An ordinance imposing on an administrative officer, as a prerequisite to the issuance of a license, the duties of ascertaining whether sanitary and drainage arrangements are sufficient to protect the public health, and whether "adequate ventilation" and "adequate plumbing and drainage facilities" are provided on the premises, does not unconstitutionally confer arbitrary legislative or judicial powers upon such officer. If his conduct should prove to be arbitrary or palpably unwarranted, resort may be had to the courts. (Ohio Supreme Court, Yee Bow vs. City of Cleveland, 124 Northeastern Reporter, 132.)

Debt Limit in Georgia Cities

Where a contractor contracted with a Georgia city to construct and equip a light and water plant, to be paid for in installments covering a term of years after completion of the contract, there was the creation of a "debt" within the provisions of the constitution of the state, limiting the power of cities to contract debts. Provision of the contract that delivery of the plant should be made to the city, "as lessee," on its completion, title to vest in the city on payment of all the installments, and the city to pay an annual "rental" of $1 until payment of all of such installments, constituted the agreement a conditional sale contract and not a lease. And since a suit brought by the contractor to recover possession of the plant or the balance due on the contract necessarily depended upon the agreement which violated the debt limit provisions of the constitution, the suit must be dismissed. (Georgia Supreme Court, J. B. McCrary Co. vs. City of Glennville, 100 Southeastern Reporter, 362.) EDITOR'S NOTE.—The opinion in this case notes that contrary conclusions have been reached by the Court of Appeals of Kentucky and the appellate courts of other states in similar cases.

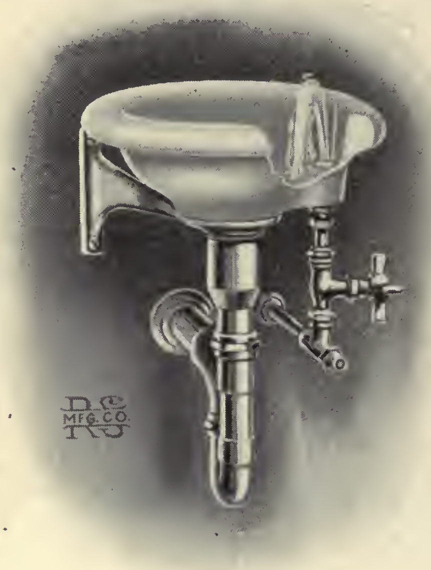
Defective Sidewalks in Iowa

"The rule recognized by this state is that to charge a municipality with negligence for conditions that render a sidewalk unsafe, where the city is not responsible originally for the condition, where it is merely a defect that came into existence thru no fault of the city, the defect, if not known to the city, must have existed for such a length of time before the accident that the officers and agents of the city, charged with the duty of caring for or maintaining its sidewalks, ought in the exercise of reasonable and ordinary care to have known and remedied it before the accident." (Iowa Supreme Court, Evans vs. City of Council Bluffs, 174 Northwestern Reporter, 238.)

Discriminatory Health Regulations

An ordinance of the city of Pensacola, requiring that every house and building, "however used or occupied, shall be provided with a sanitary privy that shall be connected with a sewer as provided by existing ordinances," and requiring compliance within 15 days after the date of notice from the Commissioner of Health, "or within such further time as the Commissioner of Health may allow," is void as permitting exercise of arbitrary discrimination by the Commissioner. (Florida Supreme Court, Ellis, City Marshal, vs. Thiesen, 82 Southern Reporter, 607.)

Vertical Stream Fountain More Deadly Than Common Cup



EXHAUSTIVE and scientific tests conducted by eminent authorities prove that vertical stream drinking fountains are a menace to the public health. It has been shown that the water which has touched the lips can fall back into the jet and seriously contaminate the source of supply.

Rundle-Spence "Vertico-Slant" Overcomes All Objections

The "VERTICO-SLANT" is the nearest to the 100% sanitary fountain that can be produced. It is the very latest feature in modern drinking equipment. The stream bubbles out at a practical and convenient angle. Lips cannot touch yet — water cannot fall back. Drinking fountain experts proclaim this fountain as sanitary in every respect — overcoming every objection to the old bubbler type. Ideal for schools, public buildings, parks and streets.

Send address for illustrated descriptive matter treating on the subject of sanitary drinking fountains.

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Municipal and Civic Publications

See also Department of News and Ideas for Commercial and Civic Organizations

Highway Inspectors' Handbook.

PREVOST HUBBARD, formerly of U. S. Bureau of Public Roads; Chemical Engineer, The Asphalt Association. John Wiley & Sons, Inc., New York. 1919. xxvi + 372 pp. Diagrams and tables.

This compact book has been prepared primarily for the use of inspectors, but will prove of interest and value to engineers and contractors. Diagrams replace many of the tables which appear in other publications. The book covers the full line of highway work with both field and laboratory tests.

Principles of Reinforced Construction.

F. E. TURNEAURE, Dean of Engineering, and E. R. MAURER, Professor of Mechanics, University of Wisconsin. John Wiley & Sons, Inc., New York, 1919. vii + 485 pp. Third Edition. Diagrams and illustrations.

This third edition of the Turneaure and Maurer book on reinforced concrete construction contains all of the best material from the two previous editions, and a new chapter covering the analysis of the flat slab, a chapter on building construction, and a new feature—a collection of tables and diagrams in the chapter at the end of the book.

Forest Products: Their Manufacture and Use.

NELSON COURTLANDT BROWN, B. A. and M. F., Professor of Forest Utilization, The New York State College of Forestry at Syracuse University. John Wiley & Sons, Inc., New York. 1919. xix + 417 pp.

The Twelve Principles of Efficiency.

HARRINGTON EMERSON. The Engineering Magazine Company, New York. xviii + 423 pp.

Financial Statistics of Cities Having a Population of Over 30,000, 1918.

U. S. BUREAU OF THE CENSUS, Sam. L. Rogers, Director. 1919. Quarto. 357 pp.

Garbage as Feed for Hogs.

In 1917 Professor G. E. Day, of Guelph, Ontario, visited Worcester, Mass., and Grand Rapids, Mich., for the purpose of studying the garbage feeding operations conducted in these two cities. The results of his study are included in this report issued, 1918, by the Commission of Conservation, Ottawa, Canada. 15 pp.

Some Social Aspects of Town Planning.

A paper read at the meeting of the Town Planning Institute of London held May 2, 1919, with the discussion thereon at that meeting. 10 pp. (Published by the Town Planning Institute, 4 Arundel Street, London, W. C.)

Building East St. Louis for Tomorrow.

This is the title of the first annual report of the War Civics Committee of East St. Louis, Ill., for the period October 1, 1918-September 30, 1919. It has been prepared by Arlyn Wilbur Coffin, Executive Director, in collaboration with the Executive Committee and the Committee of Fifty. It contains the history of the War Civics Committee and a clear and detailed summary of its first year's work, with the program and budget for the second year. 28 pp. Illustrated. (Apply to the Executive Director as above.)

Municipal Markets.

A report of municipal markets in cities having a population of over 30,000, issued by the Bureau of the Census. 1918. 56 pp. (Apply to Sam L. Rogers, Director, Bureau of the Census, Department of Commerce, Washington, D. C.)

Municipal Bond Sales in 1918.

Compiled and alphabetically arranged from official sources by *The Daily Bond News*. 1919. Quarto. Boards. 49 pp. (Published by the Steurer Publishing Co., 420 East 149th Street, New York.)

Precautions Against Freezing of Fire Extinguishing Appliances.

This 4-page booklet contains a list of 28 precautions that should be taken to prevent freezing of sprinkler equipment, fire pumps, hydrants, standpipes, first aid apparatus and chemical extinguishers. 1919. (Apply to the National Fire Protection Association, 87 Milk Street, Boston, Mass.)

The 1918 Report of Concord, Australia.

An interesting illustrated account of the progress made by the several departments of this municipality in Cumberland County, New South Wales. 22 pp. (Apply to Town Clerk H. A. Furness, J. P.)

Prisons in the Reconstruction Period.

Among the interesting lectures at the annual meeting of the National Committee on Prisons and Prison Labor, reprinted in this pamphlet, were the following: "The New Administrative and Parole System of New Jersey," "The State Use System in Ohio," "The Rights of Prisoners to Vocational Training," "The Motion Picture as an Educational Force in the Prison," and "The U. S. Public Health Program for Control of Infectious Disease in Prison." 1919. 56 pp. (Address the National Committee on Prisons and Prison Labor, Broadway and 116th Street, New York.)

Opportunities for Vocational Training in New York.

A directory of the public and endowed schools, colleges and universities of New York City that provide vocational training. An index of these schools under vocational subject headings is included, also a list of admission requirements for the professional schools. 1918. 178 pp. (Apply to Henry Street Settlement, 265 Henry Street, New York City.)

Survey of the School Buildings of Muscatine, Iowa.

The standards used in judging the school buildings of Muscatine, the findings of the survey, and the recommendations made by the survey staff are published in Extension Division Bulletin No. 41 by the State University of Iowa, Iowa City, Iowa. Numerous diagrams are used to depict conditions of buildings and grounds. September, 1918. 40 pp.

Annual Meeting of Ontario Good Roads Association.

Proceedings of the 17th annual meeting, held in Toronto, March 5-7, 1919, with addresses in full on "Stone and Gravel Road Construction," "Road Maintenance," "Federal Aid," and other subjects of importance to road officials. 63 pp. (Apply to W. A. McLean, Deputy Minister of Highways, Parliament Building, Toronto, Ont.)

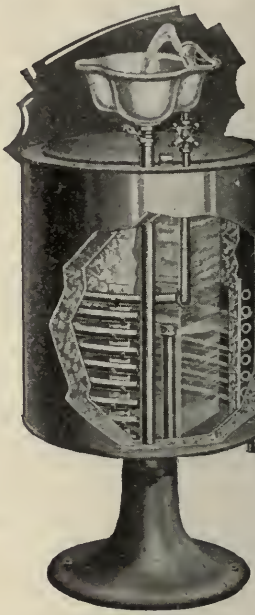
Report of State Highway Commissioner, New Castle County, Del.

For the years 1917 and 1918. 35 pp.+attached tables and road map of New Castle County. Illustrated. (Write to Charles E. Grubb, New Castle County State Highway Commissioner, Wilmington, Del.)

Highway Maintenance.

Bulletin No. 8 of the Wisconsin Highway Commission, devoted especially to patrol maintenance on the state trunk highway system, and discussing also earth road maintenance, maintenance of surface roads, bridges, gang maintenance, laws of interest to patrolmen and other topics. 95 pp. Illustrated. (Apply to W. O. Hotchkiss, Secretary, Madison, Wis.)

Puritan CANTONMENT DRINKING FOUNTAINS



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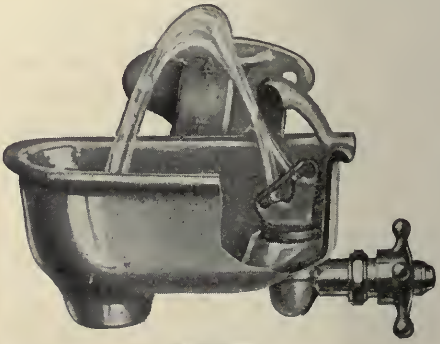

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Formed in Stream

Compensation of Municipal Engineers in Baltimore, Md.

Report of the Compensation Committee of the Baltimore Chapter of the American Association of Engineers, showing the classification, compensation and duties of municipal engineers, draftsmen and technical employes of the city of Baltimore, September, 1919. 4 pp. (Apply to Arthur D. Ihlang, Secretary.)

La Vie Urbaine.

The first issue (double number, March-June, 1919) of a review established as the organ of the Institute d'Histoire, de Géographie, et d'Economie Urbaines de la Ville de Paris, and devoted to a study of the conditions and development of cities in general and of Paris in particular. Among the material included in this number are studies of two of the cities devastated by the war—Péronne and Chauny, looking toward their restoration; a discussion, with many illustrations, of the movements of the population of Paris from 1800 to their probable development in 1961; and a comparison of the city idea of yesterday with that of to-day. (Address Éditions Ernest Leroux, 28, rue Bonaparte, Paris, VI^e France.)

The Framingham Health Demonstration.

Report of the Committee on Appraisal for the Framingham Community Health and Tuberculosis Demonstration, entitled "What Has the Demonstration Done? Should It Be Continued?" Issued by the Community Health Station, Framingham, Mass., October, 1919. A concise statement of the value of this experiment, presented to the Surgeon General of the U. S. Public Health Service, 19 pp. (Address the Community Health Station, as above.)

Venereal Disease Control in Wyoming.

Rules and Regulations Adopted by the Wyoming State Board of Health for the Control of Venereal Diseases. (Adopted September 16, 1918.) 8 pp. (Apply to the State Board of Health.)

"Houses or Homes"

is the title given to the first report of the Cincinnati Better Housing League, issued June, 1919. "The Effects of Bad Housing," "Cincinnati's Problem," "The League's Activities Up to Date" and "The League's Program" are discussed with numerous photographic illustrations showing good and poor housing conditions. 32 pp. (Apply to Bleecker Marquette, Executive Secretary.)

Financial Statistics of States.

General tables of financial statistics of all states in the United States for the year 1918 comprise the second half of this 122-page report, the first half being devoted to an introductory chapter on the methods employed in securing comparability of statistics, a chapter of explanation of the teminology used in the general tables, and a chapter of description of the tables. 1919. Apply to Sam L. Rogers, Director, Bureau of the Census, Department of Commerce, Washington, D. C.)

Oklahoma Municipalities.

A semi-monthly bulletin issued by the Municipal Reference Bureau of the University Extension Department of Public Discussion and Debate, of the University of Oklahoma, Norman, Okla. The issue for October 1, 1919, contains a study of "Administrative Control over Oklahoma Cities," by F. F. Blachly and M. E. Oatman, and an article on "Municipal Borrowing Policy," by Maurice H. Merrill. (Address the Municipal Reference Bureau, as above.)

Pennsylvania Forestry.

Report of the Department of Forestry of the State of Pennsylvania for the Years 1916-1917. Boards. 176 pp. (Address Robert S. Conklin, State Commissioner of Forestry, Columbia, Lancaster County, Pa.)

Peace-Time Fire Prevention.

Fire Prevention Number of the Municipal Reference Library Notes, New York City, issued October 1, 1919 (Vol. VI, No. 5). Not merely a statement of what New York City is doing to prevent and fight fire, but also a resumé of activity in other places and of further sources of information on this subject. (Address Dorsey W. Hyde, Jr., Librarian, Municipal Reference Library, 512 Municipal Building, New York, N. Y.)

Newark's Last Fifteen Years.

The story, in outline, of the years 1904-1919 as shown in a succession of facts relating to the development of Newark, N. J. Prepared by the Free Public Library of Newark to meet a demand for information on all phases of the city's history. 54 pp. (Apply to the Library.)

Courses in Highway Engineering and Highway Transport.

The establishment of a Chair of Highway Engineering in the Department of Civil Engineering in the University of Michigan, and the appointment of Arthur H. Blanchard, A. M., C. E., as Professor of Highway Engineering, is a valuable step toward fufilling the demand for trained highway engineeers due to the recent phenomenal development of highway transportation in the United States. An announcement of the special courses in highway transport engineering offered by the University for the year 1919-20 can be procured upon application to Louis A. Hopkins, Secretary College of Engineering, Ann Arbor, Mich. 16 pp.

Recreation Centers of the West Chicago Park Commissioners.

The story of the recreation centers of West Chicago with their playgrounds and athletic fields, their tennis courts, swimming pools, outdoor and indoor gymnasiums, club-rooms and assembly halls, makes interesting reading, especially when presented with such a wealth of attractive photographs of happy scenes and happy faces as is shown in this booklet, issued on the occasion of the fiftieth anniversary of the organization of the West Park Board. 1919. 80 pp. + 3 attached summary tables. (Apply to Isaac Shapiro, Secretary, Board of West Chicago Park Commissioners, Chicago, Ill.)

Americanization and Citizenship.

A complete guide for the applicant for citizenship papers, with a brief resumé of United States history and the ideals for which this country stands. 1919. 138 pp. (Apply to Houghton Mifflin Company, New York.)

A Public Building Group Plan for St. Louis.

This plan, designed for St. Louis by Harland Bartholomew, provides for the grouping of future public buildings in such a way as to improve the appearance of the city and help the natural expansion of the business district. The location of the municipal auditorium and community center building, to be built soon as the city's war memorial and the improvement of the surroundings of Union Station are given special consideration. 1919. 15 pp., illustrated. (Apply to City Plan Commission.)

Load Concentrations on Steel Floor Joists of Wood Floor Highway Bridges.

The report, copiously illustrated by diagrams, of an investigation undertaken by the Engineering Experiment Station of the Iowa State College of Agriculture and Mechanic Arts. 1919. 31 pp. (Write the Iowa State College, Ames, Iowa, for Bulletin 53, Good Roads Section, Engineering Experiment Station.)

Community Welfare Work in St. Louis.

Bulletin of the Central Council of Social Agencies, St. Louis, Mo., (Vol. 1, No. 2, November, 1919), entitled "Four Years Work for Community Welfare." A report for the years 1915-1918. 40 pp. (Address the Secretary of the Council, Scott R. DeKins, Chamber of Commerce, St. Louis, Mo.)

Bituminous Pavement Investigations.

Bulletin of the Agricultural and Mechanical College of Texas, Third Series, Vol. 5, No. 9, May 1, 1919; Bulletin 22 of the Texas Engineering Experiment Station. Title: Bituminous Pavement Investigations in Certain Texas Cities—Part 1, Bitulithic. By Roy M. Green, Associate Professor of Highway Engineering. 62 pp. Illustrations, diagrams, tables. (Apply to the College, as above, College Station, Texas.)

Plan for Wyomissing Park, Pa.

Report and plans (by Hegeman and Peets, city planners, Wyomissing, Pa.) for the development of the land under the control of the Wyomissing Development Company, for a modern garden suburb of Reading, Pa., 1919. Quarto. 48 pp. Many drawings, illustrating the features of a comprehensive plan for an area of 500 acres, rich in scenic beauty, within one to three miles of the heart of the city. (Apply to the authors, as above.)

French Laws on Town Planning and Reparation of War Damage.

A translation by Dr. Roscoe Pound, Dean of the Harvard Law School, of the French laws which became effective last spring on town planning and the reparation of recent war damage. Expressed as far as possible in American legal phraseology. Published and copyrighted by the National Civic Federation, October, 1919. 51 pp. (Address the National Civic Federation, Metropolitan Tower, New York, N. Y.)

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Union Metal Lamp Standards on Lansdowne Ave., Galt, Ont., Can. This beautiful little city has miles of streets and boulevards lighted with specially designed Union Metal Lamp Standards.

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In their work with over 1,000 cities the Union Metal designing department has developed a complete line of lighting standards that can be scientifically adapted to meet any lighting condition. They have created a type of standard which is handsome, clean cut and massive—in keeping with the architecture of famous buildings, yet suited for the quiet, residential section or elegant boulevard.

Union Metal Lamp Standards in combination with General Electric Lighting units give a lighting system in which each part is designed by engineers who have been pioneers in the development of modern street lighting.

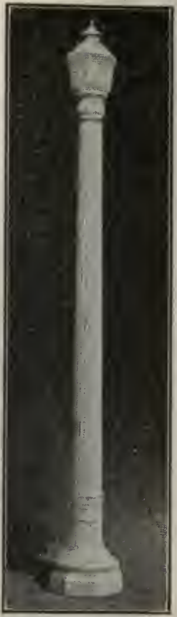
This development has been possible only because of the patented pressed metal construction, which allows a flexibility of design and a clean-cut flute, impossible to obtain in cast iron or concrete. **Notwithstanding this, the designs have been widely copied in these materials and offered as a substitute by organizations lacking the facilities and engineering experience to render the designing and development service required.**

Have Your Lighting System Designed Instead of "Ready Made"

Union Metal Engineers will plan a system exactly suited to any street or location in your city and assist you in putting across the necessary campaign. Ask them. Send for 80 page catalog on street lighting units.

THE UNION METAL MFG. CO. - - Canton, Ohio

Largest and Oldest Manufacturers of Ornamental Lighting Standards



Design No. 874, Union Metal Lamp standard with G. E. Form 8 Novalux Unit. This is the most modern unit for street lighting. Also furnished with Ribbed Glass Lamp Form 8-K.

Combination Railway and Lighting Poles
Installed on Hopple Street Viaduct
Cincinnati, Ohio

"ELRECO" Combination Railway and Lighting Poles do double duty—support trolley wires and ornamental lighting fixtures.

NO LAMP STANDARDS REQUIRED.

Write for Illustrated Book on Modern Street Lighting.

ELECTRIC RAILWAY EQUIPMENT COMPANY

New York CINCINNATI, OHIO 30 Church St.

Methods, Materials and Appliances

News for Boards of Public Works, Engineers, Contractors, Purchasing Agents, and Others Interested in the Economical Construction and Efficient Operation of Public Improvement Undertakings

Redwood Block Street Paving

Redwood block pavement differs essentially from other forms of wood paving in that the wood has natural lasting qualities and needs no artificial preservative to retard decay. It is claimed that the natural preservative in redwood serves the all-important purpose of eliminating the need of applying any artificial preservative. The blocks before being laid are dipped in boiling asphaltum cement, which penetrates into the wood fiber about one-quarter of an inch. The process serves the triple purpose of sealing the blocks against moisture, rendering them antiseptic, and of cementing the end fibers of the wood, which become tough and exceedingly resistant to traffic abrasion. The blocks are laid rather loosely, with interstices sufficient to admit of free inflow of hot asphaltum cement, which is applied immediately after block-laying. This cements the blocks together into a solid structure, and also covers the surface with a heavy paint coat of asphaltum, which absorbs the sand carpet spread immediately after grouting. The final result is a bituminous skin coat on the blocks, which will sustain much traffic abrasion and is renewable at a trifling expense. The skin coat in no degree affects the essential characteristics of untreated wood-block street pavement, and does very effectually increase the wearing qualities.

Wood block pavement should preferably be laid upon concrete foundations, and all the details of construction should be strictly in accord with specifications prepared by an engineer experienced in this particular character of work. Information and specifications may be secured by municipalities from the California Redwood Association, 216 Pine Street, San Francisco, Calif.

Service Motor Truck Company Moves into New Offices

The offices of the Service Motor Truck Company of Wabash, Ind., have just been moved from the building which they have occupied for the last ten years into a new brick and reinforced concrete administration building three stories high, which has just been completed at a cost of $150,000.

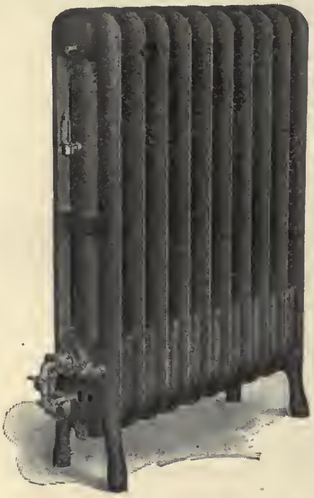
During the last few years the entire efforts of the Service organization have been spent

GENERAL VIEW OF REDWOOD BLOCK PAVING LAID IN 1898 ON TWELFTH STREET, OAKLAND, CALIF. TRAFFIC AVERAGES 3,000 VEHICLES PER DAY

CLOW
CHICAGO

STEAM HEAT NO BOILER

For the utmost in satisfaction and economy in heating— particularly for auxiliary service in locations where the central plant does not give the required heat at night or in fall and spring there is nothing better than



CLOW

"Gasteam" Radiators

Each radiator is always instantly ready for use as a separate, complete, permanent heating unit or part of a system. A match starts it—automatically regulates gas flow—locations can be kept at any temperature desired. No dirt—waste or bother.

Let us send you our catalogue

James B. Clow & Sons Established 1878
534-546 So. Franklin St.
CHICAGO, ILL.

Sales Offices
New York Milwaukee St. Louis
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Detroit Pittsburgh San Francisco
Tampa Baltimore

Works:
Chicago, Ill., Newcomerstown, O.
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CLOW
CHICAGO

Marchant

"WOULDN'T RUN AN OFFICE WITHOUT ONE"

So says one of our leading county officials in Illinois.

A machine such as the

MARCHANT CALCULATOR

that accomplishes the work of two or three good deputies and proves the work for you as you go along, is surely worth investigating.

City and County officials are equipping their offices with modern devices for the saving of time and energy.

Whether it is:—

ENGINEERING PROBLEMS
TAX APPORTIONMENT
BOND REDEMPTION
SQUARE ROOT
APPRAISALS
EXTENSIONS
TRAVERSES

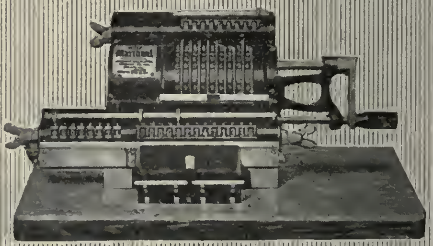
Or just the simple yet brain tiring multiplication, and divisions you will find that the Marchant will do your figuring for you and do it efficiently too.

We are always glad to explain the time and labor saving properties of the Marchant as applied to calculations.

Write our nearest office:—

Boston: 220 Devonshire St.
Philadelphia: 900 Bulletin Bldg.
Chicago: 237 Railway Exchange Bldg.
Denver: 1219 Foster Bldg.
Seattle: 262 Empire Bldg.

MARCHANT CALCULATING MACHINE CO.
Oakland California



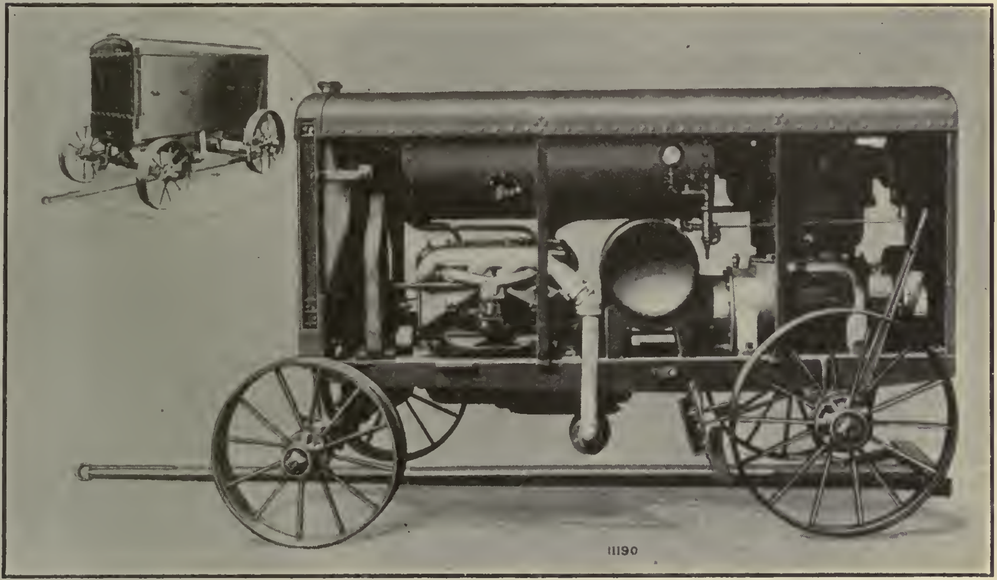
in enlarging the factory and facilities for production, with the result that it was able to turn out a vast number of Liberty "B" military trucks during the war and is now producing an enormous number of trucks for commercial purposes. The administration building has over 20,000 square feet of floor space and is one of the finest administration buildings in Indiana. In addition to the offices proper are to be found recreation rooms, offices for visiting distributors and dealers, and a huge auditorium where sales conventions can be held.

A New Type of Portable Air Compressor

The only thing that for years kept the contractor and the city official from all sorts of pneumatic labor-saving devices was the trouble and expense of installing an air power plant on a short-time job. Despite the advantages incident to the use of air-operated tools, it was found difficult to justify the costly transport of a cumbersome stationary machine and the building of a shelter, the setting up of a steam boiler, perhaps, and the laying of a pipe line for only temporary use.

The Ingersoll-Rand Company, 11 Broadway, New York City, has recently introduced a light weight gasoline engine driven unit, built in two sizes, to be known as the Imperial type 14 portable compressor. The power plant of each consists of a duplex, vertical compressor, driven at high speed by a four-cylinder, four-cycle tractor type gasoline motor. It is pointed out that the outfit, being designed especially for portable use, has had unnecessary weight eliminated, and affords maximum air power output per unit weight. The larger machine, of 210-cubic-feet capacity, weighs only 6,000 pounds, and the 118-cubic-feet unit 4,000 pounds.

The mounting of the machines is worthy of note, particularly the swiveled front axle, which moves freely in both horizontal and vertical planes. This, with the rigidly attached rear axle, gives three-point suspension and permits the outfit to pass over inequalities of ground without racking effect or misalignment of the power plant.



THIS 210-CUBIC FOOT AIR COMPRESSOR IS MADE TO BE READILY PORTABLE, AND ACHIEVES ITS PURPOSE

The Evolution of Sanitary Street Cleaning

It is now generally accepted that street dirt and filth accumulation constitute a real menace. Analysis of street dirt has shown the presence of more than 60,000,000 bacteria per cubic inch, including many of the most dangerous types—tuberculosis, typhoid, smallpox, scarlet fever, tetanus, yellow fever and bubonic plague. The "White Wing" method of cleaning is helpful, but sweeping methods usually leave a portion of the filth which has gathered in the street depressions and which when dry is lifted into the air and spread about the community. Today pressure spray nozzles and valves have been practically perfected, so that a nozzle is used to deliver a stream of water at a forward angle and laterally on a street pavement under sufficient pressure to thoroly scrub the pavement. The two-motor flushing and sprinkling machines manufactured by the Tiffin Wagon Company, Tiffin, Ohio, use this method of street cleaning. This type has been in use for many years in municipal work, and has been

HARRISON
CONCENTRATED FILTER
ALUM

Harrison Concentrated Filter Alum is the *highest strength filter alum obtainable.* It contains 22% Al_2O_3, which is equivalent to 73% Sulphate of Alumina or 30% *more concentrated than the ordinary commercial goods.*

The use of this highly concentrated product results in a saving of at least a third in the cost of transportation and reduces storage and handling charges to the very minimum. It is adapted to any mechanical filter and especially recommended wherever waters of high turbidity and low alkalinity present unusual filtration problems.

We also manufacture filter alum in all the commercial grades including 17% Al_2O_3, and will be very glad to furnish prices and full information.

E. I. Du Pont De Nemours & Company, Inc.
Sales Department, Acids and Heavy Chemical Division
WILMINGTON DELAWARE
Branch Offices:
NEW YORK PHILADELPHIA CHICAGO NEWARK COLUMBUS BOSTON

A TIFFIN FLUSHER IN SERVICE AT LONDON, ONTARIO

found very successful. Power flushing apparatus is the same on all Tiffin outfits with the exception of the tank sizes, which vary from 750 to 1,800 gallons.

Yeomans Brothers Move

Yeomans Brothers, manufacturers of electric pumping machinery and sewage ejectors, of Chicago, Ill., have moved their general office and factory to 1417 Dayton Street, where they have improved manufacturing facilities.

Simplex Meter Receives Medal from Franklin Institute

Acting thru the Committee on Science and the Arts, Franklin Institute, Philadelphia, Pa., recently awarded its Edward Longstreth Medal of Merit to John Walter Ledoux, of Swarthmore, Pa., for the Simplex Venturi meter manufactured by the Simplex Valve & Meter Company of Philadelphia.

Hart at Chicago Office

William F. Hart, who for several years was district manager of the Pittsburgh branch of the Hazard Manufacturing Company of Wilkes-Barre, Pa., and who during the last two years has been assistant general superintendent at the factory, has been placed in charge of the Chicago sales office and warehouse, with the title of district manager.

His wide acquaintance and intimate knowledge of both the manufacture and the use of wire rope and rubber-insulated wire equip him to intelligently serve purchasers in the Chicago district.

Byrum Manager of Troy Wagon Works

R. C. Sykes, General Manager of Sales of the Troy Wagon Works, Troy, Ohio, resigned his position with the company on October 17 to enter a personal business in which he is one of the controlling partners. Mr. Sykes will be succeeded by Ike S. Byrum, who has been with the company for the past eight years as salesman, special representative, and more recently as assistant to the general manager of sales.

Tractors for Exacting Road Work

There is little doubt that road grading is one of the most exacting services to which tractors can be put. Where the soil is heavy and rocks are encountered, a grader is not an easy machine to haul, but tractors of sturdy construction with reinforced steel frames are being built to-day which can readily handle this type of work.

The Rumely OilPull tractor, manufactured by the Advance-Rumely Thresher Company, La Porte, Ind., burns kerosene for fuel. It is claimed that while many tractors can burn kerosene, the OilPull tractor burns it successfully and economically under all conditions and at all loads up to its full rated power. The OilPull tractor is designed and built to burn oil, and there is no racing at light load when traveling to and from work and no lying down when the load changes. If a tractor does not stand up to the work which is required and give continuous service year after year, it is not satisfactory. The OilPull is dependable, and has seen ten years of hard work in the hands of some of its owners.

AN ADVANCE-RUMELY TRACTOR PULLING A ROAD GRADER

Chief Coots

POPULAR Chief Coots of Indianapolis introduced 'NOBBIES' in the Hoosier Capital more than seven years ago.

That 'NOBBIES' have a clean record for satisfaction is shown by their use on the heavy fire fighting apparatus of such cities as Chicago, Detroit, Grand Rapids, Augusta, Sioux City, Chattanooga, and many others. Performance counts.

Dayton Airless Tires

GUARANTEED
2½ YEARS

Made exclusively for Fire Department use.

Ride like Pneumatics
No Punctures
No Blowouts

Write for information

The Dayton Rubber Mfg. Co.
Dayton, Ohio

TRADE MARK
The City of
GOODRICH
Akron, Ohio

GOODRICH TIRES

"BEST IN THE LONG RUN"

Our Map Pins. Exact Size.

EDEXCO GLASS HEAD MAP PINS

Will Not Peel or Chip
For Use on Maps and Charts.

2 Sizes—16 Colors. Color runs all the way through.

Plotting Papers for Charts To show the state of work in progress.

Send for Free Sample Package containing Map Pins and other Map marking devices, sample EDEXCO Map Mount, Charting Papers, Curve Cards and Catalog of Supplies for making GRAPHIC RECORDS. Catalog alone sent free if desired.

Educational Exhibition Company
327 Custom House St.,
Providence, R. I.

Detroit Office for Mann & MacNeille

The well-known firm of architects and construction engineers, Mann & MacNeille, New York City, has announced the opening of a branch office in the Book Building, Detroit, Mich. The new Detroit office has been opened to facilitate the work of the organization in industrial housing, city planning, municipal expansion, general architectural design and construction thruout the Middle West.

Prominent Filter Manufacturers Report Banner Year

The Norwood Engineering Company of Florence, Mass., manufacturers of water purifying equipment, report a very satisfactory year as a whole. They have just completed the installation of a one-million-gallon concrete gravity filtration plant for the town of Newark, N. Y., under the supervision of James P. Wells, consulting engineer, of Rochester, N. Y. The company is completing a plant of one and one-half million gallons capacity for the city of Wadsworth, Ohio, and has just secured the contract for the equipment of twenty-two additional filters for the purifying plant at Toledo, Ohio, for which city it furnished and installed the original filters. The first installation of twenty million gallons was erected in 1909. In 1911 fourteen million gallons were added, which, with the recent contract just secured for twenty-two million gallons, makes this plant one of the largest mechanical gravity filtration plants in the United States. The total capacity will be fifty-six million gallons per day. W. G. Clark, 1047 Spitzer Building, Toledo, has been the consulting engineer on this work since it was started in 1909.

Fairbanks, Morse & Company to Build New Foundry in Beloit

Announcement has recently been made by Fairbanks, Morse & Company, Chicago, Ill., that this company will erect a new modern foundry in Beloit, Wis., early next year. The new structure, when completed, will be 900 feet long by 550 feet wide and will contain 495,000 square feet of floor space. This structure, including the storage of flasks, iron, sand, etc., which will also be under the roof, will cover eleven acres of ground. The complete structure will have an ultimate capacity of 350 to 400 tons of gray iron daily. It is claimed that this will be equal in size and output to any foundry in the world.

Structural materials are already being moved to the grounds, and construction will be begun as soon as frost is out of the ground. Every effort has been made for the protection of the safety and health of the employes, and every modern, scientific foundry device and improvement in the casting of gray iron will be incorporated in the new Beloit plant.

Electric cranes will carry the raw material to and from the cupolas. Electric grab buckets will unload the moulding and core sand and coke. Electric magnets will grip the raw pig iron and remove it from the cars. Electric cranes and conveyors will carry all molten metal from the cupolas to every mould, whether for giant castings of 10,000 pounds or for tiny ones of a few ounces.

Patrol Maintenance of Asphalt Roads

With the ever-increasing construction of asphalt roads within cities and well out into the suburban districts, heavy traffic has greatly increased over ever-expanding areas. This has necessitated patrol maintenance of asphalt roads and isolated repair units. Littleford Bros., 500 East Pearl Street, Cincinnati, Ohio, have taken cognizance of this and have placed on the market the Littleford Patrol Heater No. 68 for tar and other bituminous materials. It is designed especially for use where the patrol system is in vogue on state and county road departments. Where it is necessary to make patches immediately after a road shows signs of wear, a patrolman with this outfit can readily reach the point and do the necessary work without delay. The heater is constructed so that it can easily be handled by one man. The fire box is fitted with a cast iron grate and a hinged fire door. The welded kettle has a capacity of 8 gallons. It rests entirely within the fire box and is removable.

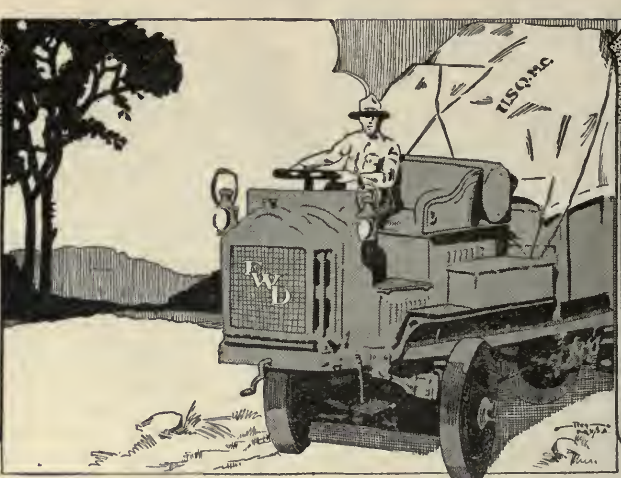
THIS PATROL HEATER IN YOUR MAINTENANCE OUTIFIT WILL BE OF CONSTANT SERVICE IN ELIMINATING RUTS AND HOLES

Since thru highways are now frequently constructed of concrete or brick, with the knowledge of methods of repairing these roads with bituminous materials highway engineers will fully appreciate the benefits of this new piece of portable apparatus.

Trucks and the Man—

Takers of Hills in High

Over There, F-W-D Trucks and American Soldiers Took Hills and Went Over the Top Together, in High



This advertisement was donated by The Four Wheel Drive Auto Company to the U. S. Army Recruiting Service.

The reading matter was written and the idea for the drawing furnished by an officer who used F-W-D trucks on the march of his battalion into Germany and who is still grateful for the way in which the F-W-D's took the hills in high.

The drawing was made by an enlisted man in the Army who is taking advantage of the "Earn while you learn" opportunity of service in the Army.

THOSE strenuous days are happily over, but F-W-D and the *American Soldier* are still taking them in high and going over the top of peace time success.

The American Army offers to the young men of our country an opportunity to prepare themselves for many skilled trades, to serve their country and to earn while they learn.

F-W-D offers to America the product of skill and the test of service. F-W-D has earned its pre-eminent position in industrial transportation because it has learned through service.

F-W-D Builders of Trucks; the American Army Builders of Men, for Peace, Industry, Prosperity.

A full line of F-W-D Trucks will be exhibited at the New York Show January 3-10

THE FOUR WHEEL DRIVE AUTO CO., Department 106, CLINTONVILLE, WIS.

dump wagons

WATSON Dump Wagons have been known to perform constant and satisfactory service in scores of municipalities for ten years and more without showing any appreciable wear.

City and County officials all over the country find that Watson Wagons are the best—the most durable—and the most economical in the end—for hauling garbage, ashes and refuse and for service in connection with all kinds of construction and road maintenance work. One of the many features of a Watson is the non-sagging bottoms—bottoms that over-lap and "stay-tight."

Send us your address so we can forward you full particulars regarding the Watson line of Dumping Wagons, Tractors, Trailers, and Semi-Trailers.

Watson Products Corporation

Successors to Watson Wagon Co.

30 Center Street Canastota, N. Y.

TIFFIN

WHEN you start to investigate the merits and cost of Motorized Street Flushing you will want information about the first successful flusher of this type,—the flusher that still enjoys greater sales than any other.

THE TIFFIN WAGON COMPANY, Tiffin, Ohio